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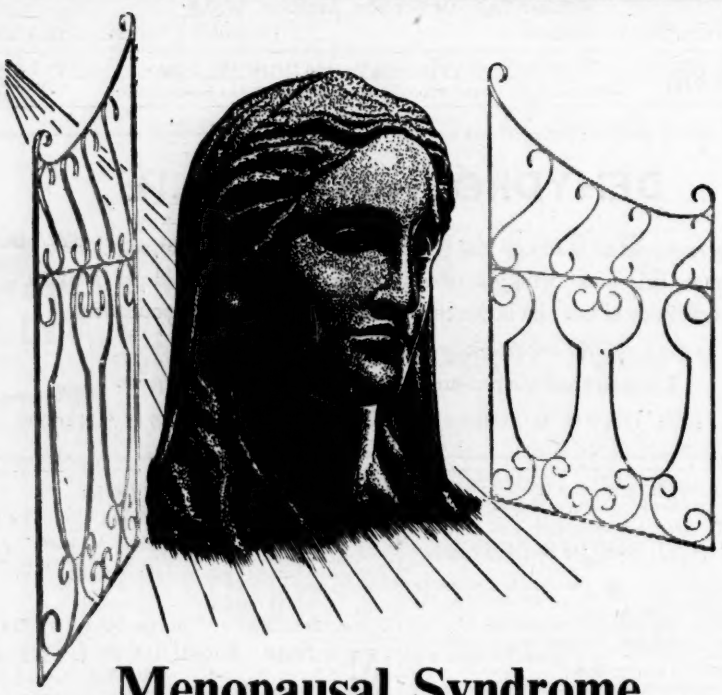

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Contents :—F. M. UBER : Avoid Fruitless Experiments. D. R. BRIGGS : Osmotic Pressure Measurements. E. G. PICKELS : Centrifugation. L. V. HEILBRUNN : Viscosity Measurements. L. R. PROUTY and J. D. HARDY : Temperature Determinations. M. KLEIBER : Calorimetric Measurements. E. W. FLOSDORF : Quick-Freezing and the Freezing-Drying Process. H. J. CURTIS : Bioelectric Measurements. D. R. BRIGGS : Electrophoresis. E. C. GREGG, Jr. : Ultrasonic Vibrations. O. W. RICHARDS : When to use Special Microscopes. J. HILLIER : Electron Microscopy. H. F. BLUM : Action Spectra and Absorption Spectra. J. W. GOWEN : X Rays and X Irradiation. L. H. GRAY (*Radiotherapeutic Research Unit, M.R.C., Hammersmith Hospital*) : Electrons, Neutrons, and Alpha Particles. F. M. UBER : Stable Isotopes as Tracers. A. F. VOIGT : Radioactive Tracers.

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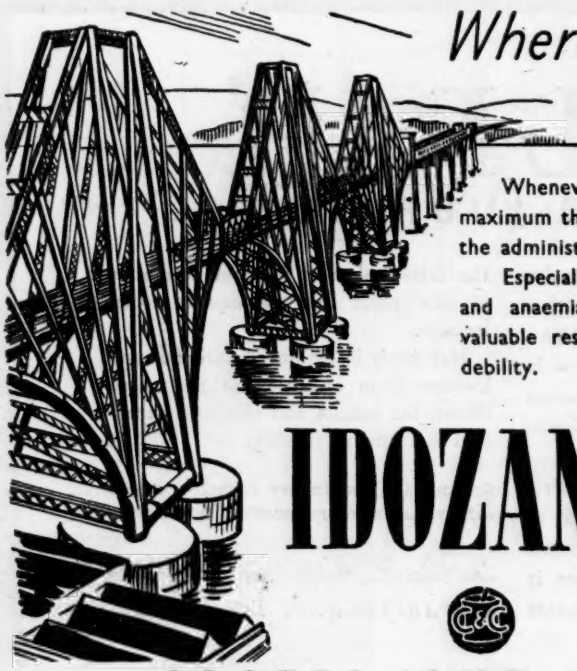

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* *Preliminary statement by the Medical Research Council, Lancet*, 1949, ii, 1237.

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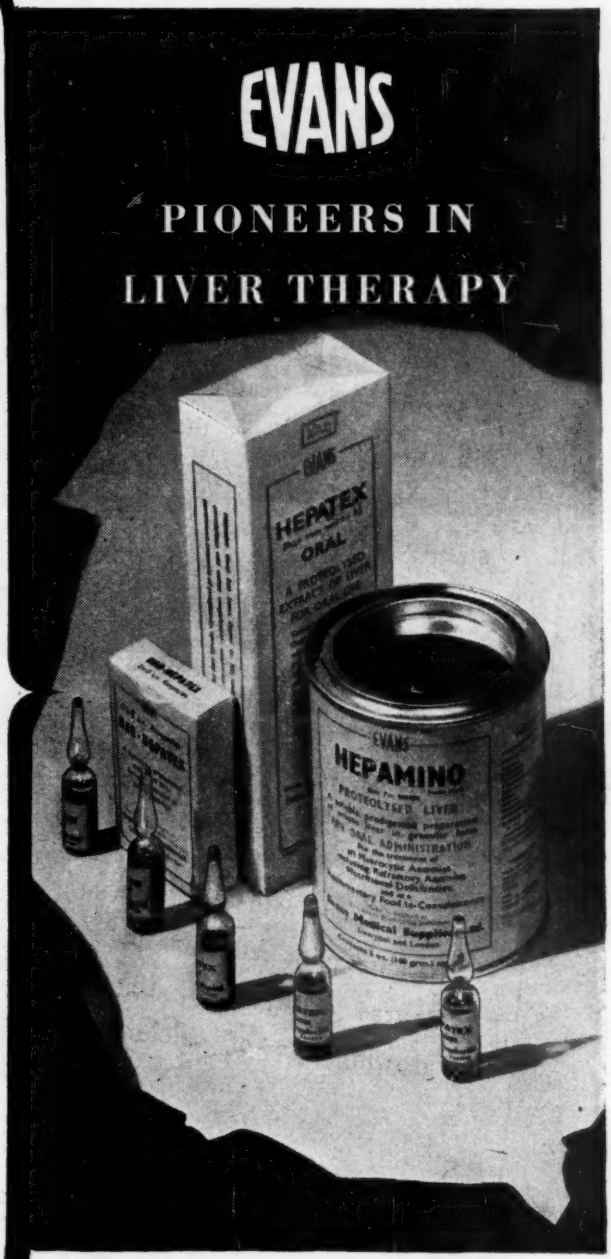

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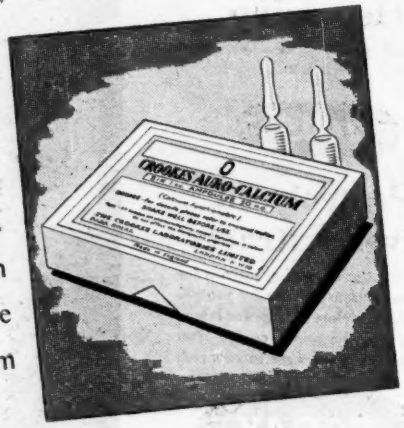

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J. Amer. med. Ass., 1947, 135, 496.
Amer. J. Psychiat., 1946, 103, 159.
Texas St. J. Med., 1947, 43, 328.

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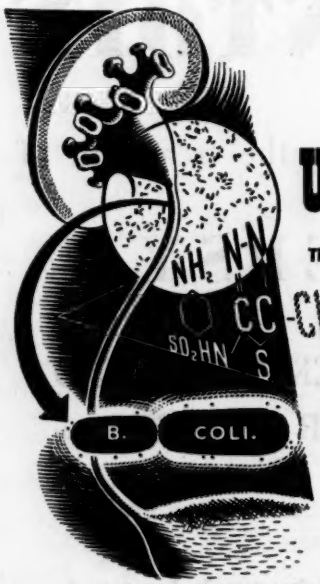

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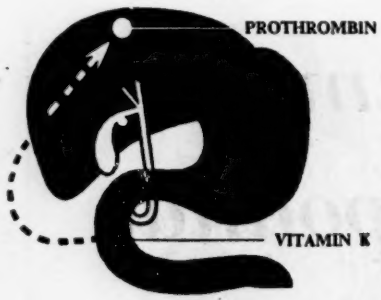
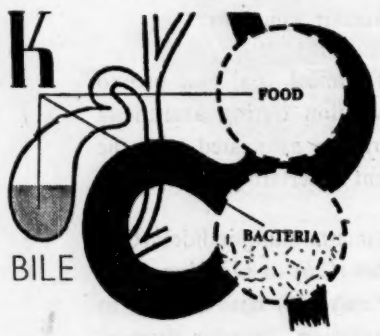


1 *Vitamin K is essential for the production of prothrombin.*

2 *In hypoprothrombinæmia the clotting time of the blood is increased.*



3 *Natural Vitamin K in the gut is derived partly from the food and partly from the intestinal flora which synthesize it. Bile is necessary for its absorption.*

4 *Deficiency of prothrombin leads to neonatal hæmorrhage which can be prevented and treated by the administration of Water-Soluble Analogue of Vitamin K - Boots.*

Water-Soluble Analogue of Vitamin K - Boots has advantages over the natural vitamin and its oil-soluble analogues. It can be given by intramuscular injection without local irritation, and intravenously when a rapid response is required. It is also effective orally, and is readily absorbed in the absence of bile. *Literature and further information gladly sent on request to Medical Department.*

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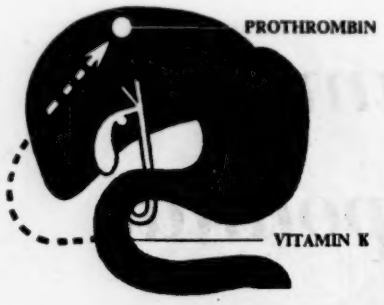

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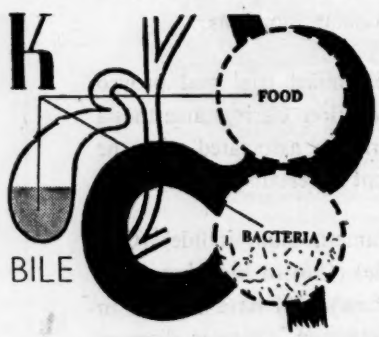

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A NEW PROCEDURE FOR DUODENAL ULCER

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DUODENAL ulceration is becoming an increasing economic problem. Not only does the rising stress of modern life, in certain occupational classes of the population, lead to an increasing incidence of peptic ulcer in these groups but also it is responsible for a similar failure-rate from medical treatment. Partial gastrectomy, which for nearly twenty years has been the recognised surgical answer to this problem, is not the entire success originally anticipated. The initial Polya technique has gradually had to be modified to eliminate, so far as possible, the problem of recurrent ulceration. This has necessitated an increasingly drastic resection of the gastric mucosa, the culmination of which is seen in the various types of subtotal gastrectomy now in vogue. Such radical procedures certainly effect a cure of the ulcer diathesis by reducing the gastric acidity, but they are both unæsthetic and needlessly drastic operations for duodenal ulcer, particularly when the ulcer has sometimes to be left in situ.

RESULTS OF GASTRECTOMY

The relatively small stomach which results from the radical resections of modern gastrectomy is often incapable of carrying out its physiological functions adequately. It can neither hold a sufficiency of food nor digest it properly; and not surprisingly this leaves much to be desired from both physiological and economic standpoints. Recent analyses of the after-results of this type of operation confirm the original view of St. John et al. (1939) that they are not nearly so satisfactory as was originally believed. Gastrectomy is a mutilating procedure, and a high proportion of patients suffer afterwards from recurrent gastro-intestinal upsets, which are often sufficiently severe to affect adversely their whole economic life. The symptomatic and economic results in over 1000 cases of gastrectomy, reviewed by six different workers, were as follows:

	Gastro-intestinal symptoms	*Easy fatigue*	*Poor economic results*
Gastric ulcer:			
Warren and Meadows (1949)	58·8%	52·9%	35·2%
Watson (1947)	62·7%	..	16·9%
Duodenal ulcer:			
Jordan (1941)	60·0%	..	..
Watson (1947)	58·9%	..	13·2%
Warren and Meadows (1949)	40·5%	32·4%	8·1%
Allen and Welch (1946) ..	34·0%	..	..
Peptic ulcer (unspecified):			
Kemp (1947)	45·0%	..	17·0%
St. John et al. (1948) ..	31·2%	..	9·4%

It will be seen that about a sixth of the apparently successful surgical cures are poor economic results, and that half of them are relative physiological failures.

Though this may be a comparatively small price to pay for freedom from dangerous complications or possible malignant change in the case of medically resistant gastric lesions, it ought not to be necessary in chronic duodenal ulceration which is not subject in the same degree to such hazards.

ADVANTAGES OF VAGOTOMY

A great volume of detailed research during the past ten years has proved conclusively that it is possible, by the less drastic and simpler procedure of vagotomy, to achieve an equally effective and permanent reduction of the hyperacidity which is the cause of duodenal ulceration. This operation, first successfully performed by Dragstedt and Owens (1943) in America, provides the logical and more satisfactory physiological alternative to subtotal gastric resection. Division of the vagus nerves leads not only to a great diminution in the dangerous fasting secretion and in the high acid values of the early neurogenic stage of gastric secretion but also provides considerable reduction in the acidity during the second phase of digestion (Beattie 1948). Moreover, the relief of local muscle spasm which follows it is an important contributory factor towards ulcer healing. Vagotomy is not a mutilating procedure and does not interfere radically with gastro-intestinal physiology. It is a much more rapid procedure than gastrectomy, thus producing less operative shock; and this is reflected both in its relatively lower mortality and in its safer extension to patients in the older age-groups.

The first clinically successful vagotomies were done through a transthoracic approach, but increasing experience has shown the abdominal approach to be much more satisfactory. It is indeed doubtful whether the transthoracic operation is ever justified, since it does not permit either inspection of the lesion or assessment of its clinical pathology. There is always the possibility, in the absence of inspection of the abdomen, of an occasional disaster resulting from failure in diagnosis. Abdominal exposure and section of the vagus nerves, by a modification of the technique originally described by Dragstedt et al. (1947), is an easy and rapid procedure. It takes rather less than twenty minutes in an average case, and enables complete neurectomy to be more consistently attained than is possible through the transthoracic approach. It is only beneath the diaphragm that the plexiform vagal branches are invariably grouped together into well-defined main trunks.

RESULTS OF SIMPLE VAGOTOMY

Though more than 3000 successful vagotomies have been reported in the world literature during the last eight years, recurrent ulceration has only been demonstrated at subsequent laparotomy in three cases of duodenal ulcer in which the postoperative insulin test-meal has shown complete nerve section. Recurrent ulcer symptoms are, however, relatively common after simple vagotomy and are always due to the secondary pylorospasm which follows—the result of overaction of the sympathetic system at the pylorus after abolition of its vagal supply. This is not surprising when it is appreciated that most of the symptoms of duodenal ulcer are due to the associated pylorospasm and not to the ulcer lesion. Peptic-ulcer pain of remittent type, unlike the continuous deep pain resulting from secondary involvement of adjacent structures, is always due to muscle tension. In duodenal or pyloric lesions it results from reflex pylorospasm following irritation of the ulcer by acid gastric contents and thus occurs during the later stages of gastric digestion, when enough time has elapsed for the build-up of the requisite degree of acidity. The length of time which this requires will obviously depend both on the acidity of the gastric secretion and on the rapidity with which the stomach empties; and this fact explains the varying time-interval experienced clinically in these cases. Similarly, the typical nocturnal pain is due to a gradually increasing hyperacidity from the abnormally high night-secretion present in these patients. Reduction of the gastric acidity by alkalis, food, or vomiting allows relaxation of the associated pylorospasm, with consequent relief of symptoms; and similar results are obtained by the exhibition of antispasmodics such as belladonna. Vagotomy produces the same effect by the immediate reduction in gastroduodenal tone which follows it; and it is only some months after operation, when this muscle tone has returned more nearly to normal, that the clinical effects of pyloric imbalance begin to become evident.

ANALYSIS OF RESULTS OF SIMPLE VAGOTOMY

No. of years since operation	No. of cases	No symptoms	Mild symptoms	Subsequent pylorectomy	Subsequent gastro-enterostomy	Subsequent gastrectomy	Total no. of cases requiring secondary operation
1–2 ..	35	3	5	8	13	3	24
2–3 ..	59	8	24	23	1	3	27
3–4 ..	9	2	4	2	1	..	3
Total	103	13	33	33	15	6	54

The symptoms of heartburn and waterbrash are similar evidence of hyperacid gastric contents which cannot escape through the spastic pylorus; and flatulent distension is largely the direct result of ærophagy—an attempt by the patient to relieve the sensation of muscle tension resulting from the pylorospasm, which he feels subjectively as gastric distension. In fact, the only direct symptoms in duodenal ulcer which are not due to pylorospasm are those resulting from such complications as penetration into neighbouring structures, hæmorrhage, or perforation.

It is therefore not uncommon for patients to experience what seems to be a recurrence of ulcer pain some months after successful vagotomy, though flatulent distension and regurgitant vomiting are more common symptoms. They are often followed by offensive diarrhœa, as the fermenting gastric contents are finally released through the spastic pylorus to irritate the lower reaches of the gastro-intestinal tract. The distribution of such symptoms in my cases was as follows:

Occasional mild diarrhœa		35·9%
Attacks of severe diarrhœa		14·5%
Incapacitating diarrhœa		3·9%
Total cases exhibiting diarrhœa ..	54·3%	
Occasional mild flatulence and eructation ..		17·4%
Attacks of severe flatulence and vomiting ..		46·6%
Repeated and prostrating vomiting		12·6%
Total cases of gastric retention ..	76·6%	

Even symptoms mimicking closely those of perforation or minor gastric hæmorrhage may occur, but these too are due to acute gastric distension consequent on the pylorospasm. It is the knowledge of the occurrence of such sequelæ, and a lack of appreciation of the factors responsible for them, which have led so many surgeons to abandon vagotomy, and others to delay its adoption. My own experience regarding the unhappy consequences of simple vagotomy is shown in the accompanying table. I have had so far to reoperate on no less than 54 of my 103 cases of simple vagotomy to relieve their retention symptoms. A further 14 patients show progressive deterioration and will probably come to secondary operation in time, hence the final failure-rate is likely to approach 70%. Yet in every instance laparotomy has shown healing of the original duodenal lesion, and the only pathological finding has been the typical hypertrophy and dilatation of the stomach which follow protracted pylorospasm.

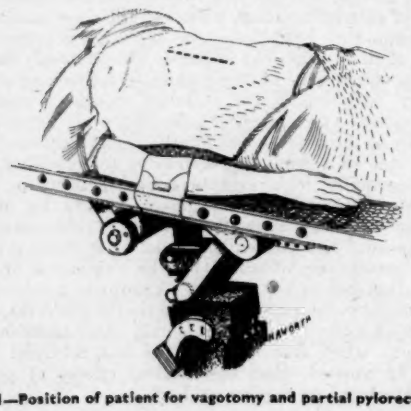

Fig. 1—Position of patient for vagotomy and partial pylorectomy.

DEVELOPMENT OF PARTIAL PYLORECTOMY

It therefore became evident to me more than two years ago, after carrying out over 100 simple vagotomies, that some associated procedure to prevent the subsequent development of pylorospasm was essential if the true value of the operation was to be obtained. There are obviously two possible approaches to this problem. Relief of the spasm could be obtained if it were possible to carry out an associated sympathectomy of the pyloric area. I attempted this in several instances without success, which is not surprising in view of the fact that the complexity of the sympathetic nerve supply to this region makes any attempt at complete denervation practically impossible. The alternative approach is by means of some mechanical procedure to eliminate the functional block at the pylorus. Gastro-enterostomy has recently been largely used for this purpose, particularly in America, but it is not without its disadvantages. Unless it is carried out at the pyloric antrum, which is a difficult technical proceeding, the distal portion of the stomach beyond the stoma can still sometimes give rise to unpleasant postoperative symptoms. Vigorous peristalsis of this segment, working against the highly spastic pylorus, can produce considerable postprandial discomfort and even typical ulcer pain.

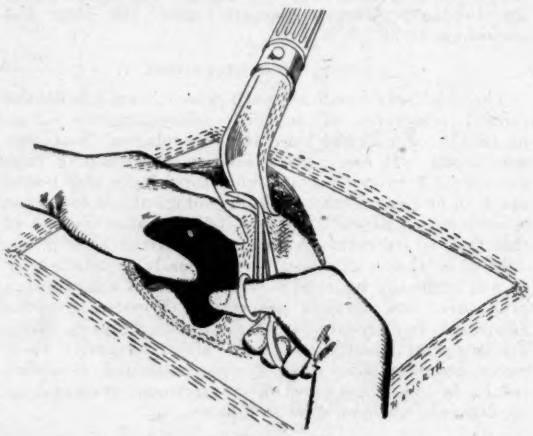

Fig. 2—Mobilisation of liver.

Moreover, the effect of an associated gastro-enterostomy is to prevent true assessment of the results of the vagotomy, besides running possible risks of subsequent jejunal ulceration in some cases. Though vagotomy has been used successfully on many occasions to cure anastomotic and jejunal ulceration following ill-advised gastro-enterostomy or inadequate gastrectomy, cases have recently been reported in which these complications have followed vagotomy with an associated gastrojejunostomy. It seems likely that, even when their neurogenic secretion has been eliminated by complete vagal section, some people may still produce a sufficiently high concentration of acid during the hormonal stage of gastric digestion to damage the susceptible jejunal mucosa.

Other possible procedures which could be undertaken as an adjunct to vagotomy, to prevent later pylorospasm, include pylorectomy with subsequent gastroduodenostomy along the lines of a Bilroth I operation; and an associated partial gastrectomy, such as that advocated

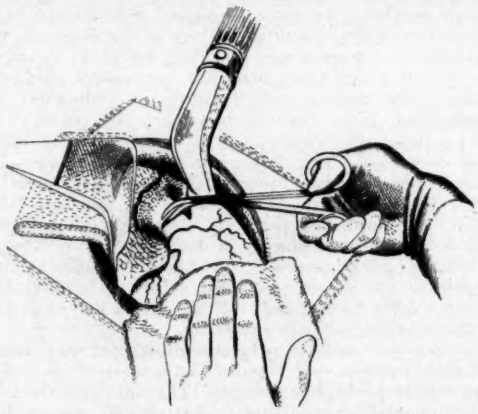

Fig. 3—Division of parietal peritoneum over lower œsophagus.

and practised by Orr and Johnson (1949). The former operation is a difficult technical feat in the presence of gross duodenal deformity, and the latter operation has several disadvantages. Besides involving the additional operation risks attendant on gastrectomy, it also leads to the removal of most of the mucosa responsible for the hormonal phase of gastric secretion. This must produce a considerable reduction in the digestive powers of the stomach—the avoidance of which constitutes one of the major advantages of vagotomy and, indeed, was the main reason for its development. An associated partial gastrectomy is therefore an unnecessarily mutilating operation from both anatomical and physiological viewpoints.

The relative failure of gastro-enterostomy combined with vagotomy to achieve perfect results in some of my cases led me to investigate the possibility of carrying out some alternative procedure at the pylorus. The first attempts along these lines were in the nature of a pyloroplasty, but it soon became apparent that this operation was not uniformly successful in providing complete relief and that it was not always feasible. It is an almost impossible technical undertaking in the presence of gross deformity of the parapyloric area, and accordingly had to be abandoned in about half the cases in favour of an associated gastro-enterostomy. The true solution to the problem was found to lie in a combined partial pylorectomy and pyloroplasty, the anterior half of the pyloric ring being excised. This operation is not only relatively easy, even in the presence of gross duodenal scarring and distortion, but also has the advantage that it often enables anterior ulcers to be excised at the same time. Moreover, it is a simple and rapid manœuvre, the whole procedure of vagotomy and pylorectomy taking little over half an hour.

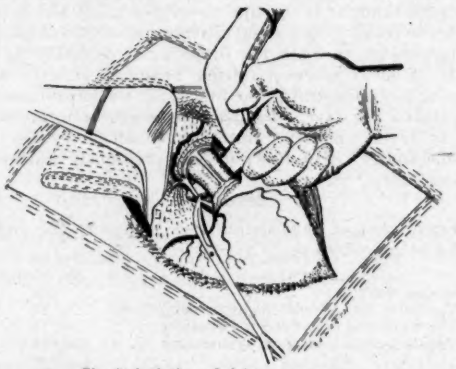

Fig. 4—Isolation of right vagus nerve.

OPERATIVE TECHNIQUE

The first essential to ease in operating lies in correct positioning of the patient on the table; fig. 1 shows the position adopted, which is a reverse Trendelenburg tilt of about 15°. The second necessity is adequate lighting, which is obtained by inclining the main lamp to about 45° and using a 'Coldlite' retractor. An upper midline incision is made, thus obtaining the necessary high exposure and avoiding the falciform ligament.

After the peritoneum has been opened, the coldlite retractor is used to lift the left hypochondriac area while the liver is mobilised by division of the left suspensory ligament (fig. 2). It is important to avoid injury to the subphrenic vessels during this manœuvre, or troublesome bleeding will ensue. The left lobe of the liver is then rotated downwards and held out of the way under an abdominal pack on the right side of the wound with a broad reflecting retractor held by a second assistant. The parietal peritoneum over the lower œsophagus is divided transversely (fig. 3) between the uppermost branches of the left gastric vessels and the point where it covers the œsophageal opening in the diaphragm. Dissection with a gauze swab on a holder will then readily

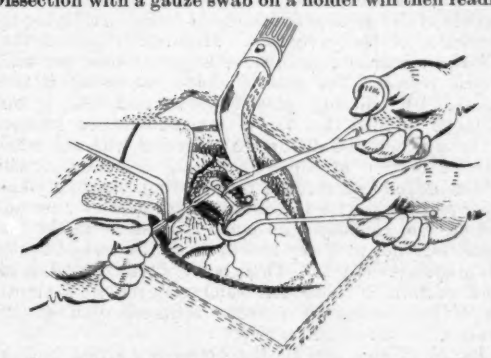

Fig. 5—Clearing œsophagus of branches of vagus.

expose the whole anterior surface of the abdominal œsophagus.

It is now easy to insinuate the right forefinger into the lower mediastinum and to mobilise the thoracic œsophagus within it; 2 or 3 in. of this can be pulled down into the abdomen and the right vagus nerve readily identified by digital dissection in the space between the œsophagus and the right crus of the diaphragm, where it lies buried posteriorly in loose areolar tissue. It is seized with long curved forceps (fig. 4), and a lead hook is then passed round the lower œsophagus to facilitate manipulation of the latter during the subsequent steps of the operation. About $1^1/_2$ in. of the nerve is excised between forceps, and both ends are tied with silk.

Traction on the œsophagus causes the anterior vagus to stand out clearly, and it is dealt with in a similar manner, care being taken to divide all the numerous tiny branches to the œsophagus and cardia (fig. 5). Finally the œsophagus and its entire surroundings are carefully explored with the finger to ensure that no nerve branches have been missed. These stand out like taut strings in the loose connective tissue and are readily recognised. After complete hæmostasis has been obtained, the gap in the mediastinum is closed by suturing the peritoneum in front of the œsophagus (fig. 6); and the left lobe of the liver is then returned to its normal position, after it has been carefully inspected for any bleeding points which may not have been successfully controlled by pressure from the pack during the preceding stage of the operation.

The duodenum is next freed from adhesions and mobilised sufficiently for the ensuing pylorectomy.

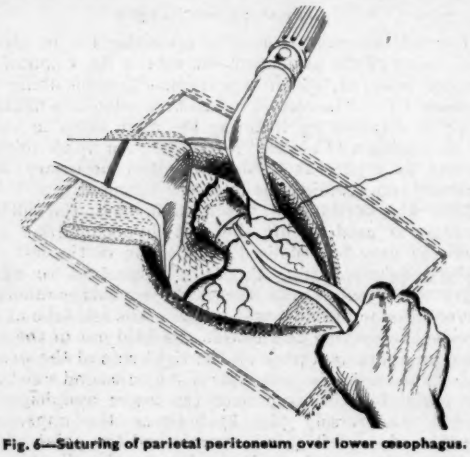

Fig. 6—Suturing of parietal peritoneum over lower œsophagus.

Stay-sutures are passed through the upper and lower borders of the pylorus and serve as retractors during the remainder of the procedure. If carefully placed they will also minimise hæmorrhage by controlling the main pyloric vessels. The general abdominal cavity is then isolated by suitably placed packs and the pyloric sphincter divided (fig. 7). A diamond-shaped segment of the stomach and duodenum, together with the whole anterior portion of the pyloric ring, is removed with scissors introduced through this opening, bleeding points being picked up with mosquito forceps as they arise and tied off subsequently. As much as possible of the scar tissue, together with any anterior ulcer, is excised during this manœuvre (fig. 8). There is often reflux of bile from the duodenum at this stage, which may require energetic use of the sucker to prevent contamination of the surrounding abdominal cavity.

Closure of this gap in the bowel is carried out, as shown in fig. 9, by two continuous intestinal sutures. The first, which is 00 catgut, unites the whole thickness of the duodenum to the gastric mucosa; the second, of no. 1 silk, again picks up the whole thickness of the duodenum and joins it to the muscular and peritoneal layers of the stomach. This forms an overlapping suture line, giving added strength against possible leakage. A final insurance in this respect is achieved by covering the suture line with a free omental graft, secured in position at each end by the stay-sutures. Before the abdomen is closed, the new pyloric opening is carefully tested for patency and size, and a last check made of hæmostasis at the site of the vagotomy.

AFTER-TREATMENT

No special postoperative care is necessary in most cases beyond the usual respiratory exercises advisable after any high abdominal incision; and the protracted gastric suction previously necessary after simple vagotomy is no longer required. Ileus of the stomach and small bowel always occurs and lasts for 24–48 hours, at the end of which time intestinal movements gradually return. But there is usually no gross abdominal distension and little discomfort; hence the patient can start a light Meulengracht type of diet twelve hours after operation. This is rapidly increased so that full normal diet is being eaten on the tenth postoperative day. The avoidance of any form of their previous dietary régime during the early stages of convalescence is, I believe, a major factor in dispelling any remaining "stomach consciousness" in these patients; and experience has shown that early return to normal diet does not delay healing either of the suture line or of any ulcer left behind after pylorectomy.

In occasional cases ileus is more protracted than usual, and such patients may require gastric suction for a few days before peristalsis returns. The administration of parasympathetic stimulants to hasten this process has not been successful. Though effective in some instances, they have caused severe pain and even collapse in others; so they have now been discarded. If continuous stomach aspiration has to be employed for more than twenty-four hours, intravenous therapy is also instituted; but this is only necessary in such circumstances and never has to be used as a routine postoperative measure.

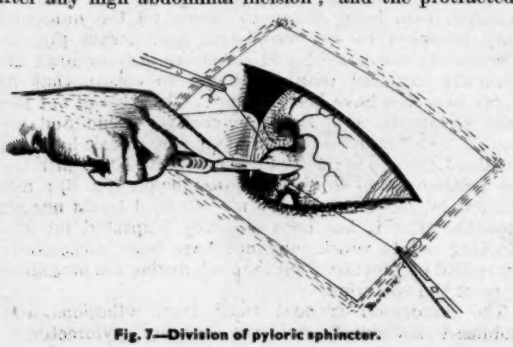

Fig. 7—Division of pyloric sphincter.

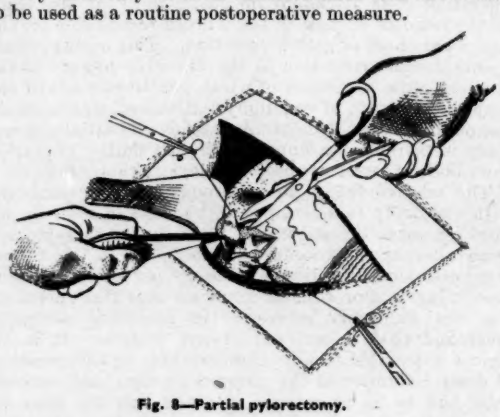

Fig. 8—Partial pylorectomy.

Early ambulation is practised, most patients getting up for the first time after forty-eight hours; the average patient leaves hospital fully ambulant on the twelfth postoperative day. The patients are discharged on a normal dietary régime, except that spirits and condiments are prohibited and smoking limited, until their first review at the outpatient department three months later.

The only unpleasant sequela during early convalescence is temporary dysphagia in over half the cases. This was formerly thought to be due to cardiospasm but is now known to result from partial obstruction of the œsophagus at its passage through the diaphragm, probably as the result of local reaction during healing. It may take place at any time during the first three weeks and usually only lasts a few days. It always passes off spontaneously and is never complete, but may sometimes cause the patient anxiety if he has not been previously warned of its possibility.

RESULTS

The number of vagotomies done by me to the end of 1949 was as follows:

Operation	*No. of cases*
Simple vagotomy	103
Vagotomy and associated gastro-enterostomy ..	26
Vagotomy and associated pyloroplasty	16
Vagotomy and associated pylorectomy	115
Total ..	260

Of these 260 vagotomies 210 were done for duodenal ulcer; and of these 210 patients, 206 have been followed up for three months or more and 4 have not been traced. In addition to the 131 cases listed above of vagotomy associated with either pyloroplasty or pylorectomy there were 33 cases in which such an operation was done later to relieve gastric retention, making a total of 164 cases of vagotomy associated with either pyloroplasty or pylorectomy.

Fig. 9—Closure of duodenum.

There have been only two deaths in the total series of 210 operations. Both occurred within six days of operation and were due to leakage from the suture line. At that time I was using two suture lines of chromic catgut for the anastomosis, and neither case showed at necropsy any vestige of surviving suture material. These catastrophes were probably due to faulty catgut, but since then I have used silk for the outer layer of the anastomosis and added the covering omental "waistcoat" as an extra precautionary measure.

One other patient developed a small duodenal fistula on the fourteenth postoperative day, which closed spontaneously within a week. Apart from this there have been no postoperative complications, and the subsequent progress of all the patients has been extraordinarily satisfactory. Retention symptoms have been completely eliminated, and radiological investigation confirms the absence of pylorospasm and consequent gastric retention. Dr. Forbes Lawson (personal communication) summing up his experience from this point of view, reports:

"In the early days, when the operation was simple vagotomy, the radiologist was more often than not defeated in his attempt to examine the duodenal cap by the very marked degree of pyloric resistance encountered. Large six-hour, and even twenty-four hour, barium residues were found in the stomach in nearly every case. Now that pyloric relief has been obtained by surgical means the picture has completely changed. The duodenal cap fills with ease, and gastric delay has disappeared, though an occasional six-hour barium residue is encountered in early postoperative cases."

There has been complete relief of ulcer symptoms in every case, and the improvement in the psychological attitude of the patients is quite outstanding. This is understandable, since they are restored to completely normal digestive life and can eat, drink, and smoke with absolute impunity. As a result there is much better adjustment to both general environment and work conditions than is possible after gastrectomy, where the "stomach consciousness" of the patient is often kept alive by the continued necessity for a modified gastric régime. A further cause of the new harmony with their surroundings experienced by these post-vagotomy patients may lie in their subsequent immunity from the reflex digestive instability which accompanies mental stress even in normal people. Many patients, at the postoperative review, volunteer the statement that their work is less effort than before and that their powers of concentration have been considerably improved. Almost all of them gain weight fairly rapidly after operation; and most of them are back at their previous trained occupations within six weeks, often despite protracted absence from it during years of previous incapacitation. Complete economic recovery and social readjustment have been obtained in every case in which the ulcer diathesis was the sole cause of the previous disability.

The only symptoms which ever arise after combined vagotomy and pylorectomy are occasional mild flatulence and intermittent attacks of transient hypoglycæmia. An admission of any digestive disturbance at all is only obtained after very close questioning, and it seems probable that the minor intermittent flatulence from which a small percentage of patients suffer does not exceed the occasional indigestion of the normal person after dietary indiscretions. Transient hypoglycæmia, on the other hand, occurs in about 10% of cases. The postoperative sequelæ not due to gastric retention were as follows:

Cases with temporary dysphagia	138 (*53·1%*)
Cases with transient hypoglycæmia:	
Following simple vagotomy	17 (*16·5%*)
Following vagotomy and gastroenterostomy	3 (*11·5%*)
Following vagotomy and pylorectomy or pyloroplasty	10 (*12·2%*)
Total	46 (*10%*)
Average gain in weight of last 135 patients during the first three months after operation	9 lb.

It is significant that the frequency of onset of transient hypoglycæmia is much the same in the gastric retention following simple vagotomy and in the much more rapidly emptying stomach after pylorectomy or gastro-enterostomy. It cannot therefore depend on the rate of stomach emptying, though the attacks are typical clinically of the "dumping syndrome" which may follow gastrectomy. My personal view on this subject is that, whether following gastrectomy or vagotomy, these attacks are the result of interference with the vagal supply to the liver or the pancreas, giving rise to intermittent alteration in sugar metabolism. They come on at gradually lengthening intervals and last only a few minutes; they are controlled almost immediately by oral glucose and have never yet persisted for more than eighteen months after vagotomy.

DISCUSSION

Up to now the bulk of surgical opinion in this country has looked askance at any suggestion that vagotomy should be substituted for gastrectomy as the operation of choice in chronic duodenal ulcer. This has been due in part to a knowledge of the unpleasant retention phenomena which may develop after it, but is largely the result of conservative prejudice based on the radical departure which it represents from accepted surgical custom. With the memory of the high ulcer-recurrence rate of gastro-enterostomy before them, surgeons have feared lest vagotomy should lead to similar disasters. Such an outlook is, however, no longer justifiable. The unpleasant sequelæ of vagotomy can be prevented by an associated pylorectomy; and an analysis of its after-results during the past seven years shows that the initial duodenal lesion invariably heals, and that ulceration does not recur if neurectomy has been complete and there is no gross gastric retention. Vagotomy is based on sound physiological principles (Beattie 1949). Gastro-enterostomy, on the other hand, was not established on a true physiological foundation. It did not deal radically with the hyperacidity which is the basic factor underlying the ulcer diathesis, and recurrent ulceration was bound to follow it in a high percentage of cases.

Vagotomy, in addition to the other advantages which it possesses over gastrectomy in the treatment of chronic duodenal ulcer, has the asset of enabling an effective surgical attack to be made on the recurrent subacute duodenal lesion. Cases of this type form a not inconsiderable proportion of those with persistent duodenal symptoms despite protracted and intensive medical treatment. Yet many of them never show a definite

ulcer crater, even after repeated radiography, and are therefore often wrongly labelled as "duodenitis." If, despite his misgivings, a surgeon is prevailed on to operate in such a case, the relatively slight pathological changes present make him justifiably doubtful of the expediency of proceeding to such a drastic measure as subtotal gastrectomy. But these patients often give histories of economic and social disability extending back over many years, and ought not to be denied the benefits resulting from successful surgical intervention. The answer in these circumstances lies in carrying out vagotomy with an associated partial pylorectomy—a relatively minor and non-mutilating procedure about which there need be no such qualms.

CONCLUSION

World-wide experience has now demonstrated, beyond all question, that vagotomy deals effectively and permanently with the basic hyperacidity underlying the ulcer diathesis. The bar to its universal adoption has been the unpleasant retention phenomena which so often follow. But these can be completely eliminated by an associated pylorectomy, and the door is now open for the recognition of vagotomy as the standard surgical procedure for duodenal ulcer. Gastrectomy should in future be reserved for the relatively rare instances where ulceration has penetrated deeply into surrounding viscera, producing complicated lesions which are no longer likely to heal spontaneously after vagotomy.

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TREATMENT OF LUNG ABSCESS

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FOR the last two years it has been felt at the London Chest Hospital that acute lung abscesses could be cured by proper postural drainage and adequate penicillin therapy; surgical drainage appeared to be unnecessary and even obsolete. This impression seemed so definite that it was decided to analyse results over the last three years, thus including a transition period when some cases were still being surgically drained, before the present "medical" regimen came into sole use.

The results of treatment of acute lung abscesses reported in the past have been, with few exceptions, depressingly and uniformly bad. There seemed little to choose between the results of "medical" and "surgical" treatment, each yielding a mortality of about a third. Smith (1948), reviewing 1750 cases collected from published reports, finds a mortality of 34·7% for medically treated and 32·7% for surgically treated cases. The number becoming chronic was considerably higher among the medical ones, and the bad results of surgical treatment were said to be due to delayed operations following over-persistent medical therapy. Before penicillin treatment was developed such therapy could be summarised under the headings of postural drainage, bronchoscopic aspirations, arsenical drugs, and sulphonamides.

Postural Drainage.—We can find no reference to the use of posture alone as a method of treatment.

Bronchoscopy as reported by Allen and Blackman (1936) gave a mortality of 6·5%; of 650 cases 61% were cured and 32·5% remained chronic. Flick et al. (1929) reported a 70% cure-rate in early cases.

Arsenical drugs, though strongly recommended by some (Joannides 1939, Fisher and Finney 1940), are as emphatically condemned by others (Cutler and Gross 1936, Rosenblatt 1940, Sweet 1940).

Sulphonamides were at first believed to hold out great promise, but usually, after early improvement, the cases receiving this treatment developed a well-marked tendency to chronicity (Smith 1948); and D'Ingianni (1944) found a mortality of 58·6% with sulphonamides, compared with 49·1% for his whole group.

SURGICAL DRAINAGE

In contrast with the rather hopeless outlook of the physicians, some surgeons were optimistically preaching the doctrine of early drainage. Brock (1942) urged surgical ("external") drainage at an early stage, preferably in the first few days after diagnosis. Neuhof and Touroff (1940, 1942), operating in the first six weeks, treated 152 cases with a mortality of only 2·6%. However, these figures are rarely attained elsewhere for various reasons. It is contended that the advent of penicillin has encouraged physicians to continue treating cases till the best time for drainage has passed. Surgeons are therefore called in when physicians have failed, and are more often required to deal with chronic abscesses than with acute ones.

PENICILLIN

The rôle of penicillin has been variously estimated, but in general workers have regarded penicillin therapy as inadequate—at best as an accessory to surgery and at worst as an obstacle to cure by delaying drainage beyond the best time. By the end of 1945 Kolmer (1947) had collected a mixed array of 65 cases of pulmonary suppuration, of which 37 were improved or recovered. Smyth and Billingslea (1945) reviewed 31 cases, of which 13 were cured, 8 improved, and 10 not benefited. Stivelman and Kavee (1946) treated 6 cases with penicillin and sulphadiazine, of which 5 completely recovered and 1 became chronic.

These early results were far from conclusive. Sellors (1946) felt that the use of penicillin was not as important as might have been anticipated. In his view the response to systemic and inhalational administration was not marked, and if the abscess did not rupture into a bronchus within a week or so surgical drainage should be considered. More recently greater credit has been given to penicillin as a prophylactic, and it is admitted that it might be of value in preventing the evolution of abscesses in areas of pulmonary infection (Donaldson 1947). However, there is a growing body of opinion that the advent of penicillin has provided not only a prophylactic but also a satisfactory therapy for most cases of lung abscess now being seen. Thus Blades (1947) found in a survey of cases in the U.S. Army that the almost universal use of chemotherapy and later of penicillin in all types of pulmonary infection was partly responsible for the relative rarity of lung abscess, and for the fact that those which did occur were of a less severe and more chronic type, rarely necessitating urgent drainage. Rubin (1947) stated that since the introduction of penicillin the need for surgical intervention had decreased considerably; he recommended doses of 1,000,000 units a day.

The modern view generally held seems to be substantially in agreement with that of Sellors in 1946. Nicholson (1947), Samson (1948), and Lester (1949) all advise a preliminary course of penicillin, and if improvement is not rapid, drainage is the treatment of choice. None of these writers suggest that intensive penicillin therapy has completely taken the place of drainage, since

it is always anticipated that some abscesses will remain open and have to be drained.

However, Sellors (1950) has lately restated his views on the usefulness of penicillin in pulmonary infections, and now says that he has not had to drain an acute lung abscess in the last two years; he recommends 2,000,000 units of penicillin per day in this condition. This is a great departure from his previous views and reflects his experience at our hospital and at the other centres where he works. No pulmonary abscess had been drained at our hospital in the last two years, and it seemed worth while to investigate the situation further.

PRESENT INVESTIGATION

The cases in our survey are those admitted consecutively to the London Chest Hospital from June, 1946, to June, 1949. We excluded those which had resulted from the inhalation of foreign bodies, obstruction by or breakdown of neoplasms, and pulmonary suppurations arising in a bronchiectatic area. We had difficulty in separating the entity "acute abscess," and criteria based on the duration of symptoms were found to be arbitrary. Thus we found that some abscesses, even though they had been present for six months, healed completely with medical treatment. Those which had been present longer than this were excluded, perhaps unnecessarily, from the series.

Samson (1948) states that within six weeks from the onset chronic changes have become established in the pulmonary parencyhma, and that therefore the best time for cure is past. Brock (1942), stating that the abscess should be watched for days not weeks, implies that he regards chronicity as established in the early stages. From the pathological point of view these writers are probably correct. From our cases it appeared that one could, from the clinical point of view, define an "acute" abscess as one which responded to penicillin therapy by complete resolution, and the "chronic" abscess as one which only partially healed. Alternatively, the diagnosis of acute or chronic abscess was retrospective and could only be made at the end of treatment.

INVESTIGATION AND DIAGNOSIS

Investigation and diagnosis were based on the history, physical signs, sputum, radiography, and bronchoscopy.

Onset.—The onset in most of our cases was insidious with no predominant factors of obvious ætiological significance; some cases followed operation. Various periods of general malaise, pyrexia, dry cough, and occasional pains in the chest, were followed by the expectoration of foul purulent sputum, sometimes preceded by small hæmoptyses.

Physical signs were generally scanty and unreliable, those of consolidation being the commonest.

Radiography generally revealed an opacity, with or without a fluid level, localised to one bronchopulmonary segment, though sometimes two adjacent segments appeared to be involved. The radiological appearances were not only important diagnostically but also a most valuable guide to the suitable position for postural drainage.

Bacteriology seemed to be of little importance so far as treatment was concerned, but sputum culture was performed as a routine, and sensitivity of the organisms determined to exclude the possibility of penicillin-resistant infections. In all our cases there was a mixed flora of penicillin-sensitive organisms, consisting mainly of non-hæmolytic streptococci, *Strep. viridans*, *H. influenzæ*, diphtheroids, *N. catarrhalis*, and occasional staphylococci; a few resistant organisms were present among the cultures sometimes. Such a mixed flora has been previously reported by Smith (1948). Anaerobic cultures were not done, and spirochætes and fusiform bacilli were not specially sought since they are penicillin-sensitive.

Bronchoscopy was done as a routine measure early in treatment, more from the diagnostic than the therapeutic aspect, since the presence of radio-translucent foreign bodies and of neoplasms had to be excluded.

TREATMENT

The two basic aims were to overcome the infection and to empty the abscess cavity. In the earlier cases in our series it was expected that these aims would be achieved by surgical drainage, with or without previous penicillin. In the later cases penicillin alone, combined with postural drainage, was used. Some abscesses responded satisfactorily to small doses, and some responded to inhalation therapy alone, but aerosol penicillin is not now being used because we regard the concentrations obtainable as inadequate for most cases. We now regard the optimal dosage of penicillin as 2,000,000 units of the calcium salt a day, given in four intramuscular injections six-hourly. This dosage was usually necessary for not less than three weeks, and seldom for more than four weeks.

After careful determination of the pulmonary segment involved and the best anatomical position for postural drainage, this treatment was given under the supervision of an experienced physiotherapist. It may be emphasised here that postural drainage is not merely a passive affair on the part of the patient—controlled coughing is required to assist drainage—nor is it to be given at long intervals for short periods. In the early days of treatment many hours a day should be spent in the correct posture for maximal drainage, and in some cases it may be possible for the patient to sleep in this position. As the sputum diminishes, six periods of half to three-quarters of an hour may suffice, gradually decreasing till the cavity is finally obliterated. Percussion of the chest wall by the physiotherapist was also most helpful. Bronchoscopic suction and the application of adrenaline swabs have not been required.

General measures, such as good diet, high vitamin intake, iron therapy, and blood-transfusion, according to the severity of the secondary anæmia, were necessary, as in the treatment of all infections. It was also important for the patient to have general physiotherapy, and to be got out of bed and on his feet soon after the initial toxæmia had been combated.

ASSESSMENT OF RESULTS

In assessing results we aimed at the following criteria. Most of the patients should become completely non-toxic in a few days, with rapid diminution of the amount of purulent sputum. By the end of the first week well-marked improvement or even apparent clinical cure should be found; in a fortnight radiological improvement should be visible; and by the fourth week there should be almost complete radiological resolution, or such significant radiological changes as to allow a confident prediction of complete resolution in the near future. If a cavity still exists at this stage the likelihood of a chronic abscess is great. In finally assessing cure, freedom from cough and sputum, normal temperature, radiological healing, and absence of damage to lung parenchyma and bronchi are essential. Bronchograms are performed after maximal radiological clearing has been obtained. Tomograms may be of great assistance in assessing the obliteration of a cavity, and may reveal bronchiectasis at a stage when the lung has not yet completely cleared and bronchograms are undesirable. Follow-up is essential; in most of our cases it has lasted for over a year and it is necessary to keep these patients under observation for considerably longer.

RESULTS

Of 32 acute cases seen in three years 7 have been treated by surgical drainage and 25 with penicillin and postural drainage.

RESULTS CLASSIFIED ACCORDING TO OUTCOME

Treatment	No. of cases	Outcome				
		Cured	Becoming chronic	Bronchiectasis symptomless	Bronchiectasis with symptoms	Died
Penicillin, high dosage ..	19	15	2	1	..	1
Penicillin, low dosage ..	6	3	..	1	2	..
Surgical drainage	7	3	..	3	1	..

Of the 7 cases drained the shortest history was of two weeks and the longest twenty weeks, the average history before diagnosis being five and a half weeks. Of the 25 medically treated cases the shortest history was of three weeks and the longest twenty-four weeks, with an average duration of nine and a half weeks.

The results have been classified in the accompanying table according to the ultimate clinical picture. We have found it necessary further to subdivide the medically treated cases into "high penicillin dosage" and "low penicillin dosage" groups, since there seemed to be a considerable difference between those receiving 1,000,000 or more units a day and those receiving less. In the low-dosage group are also included those who had inhalations alone. This "high dosage" scheme is the one which has been in use for the last eighteen months.

The patient who died in the high-dosage group was a diabetic admitted semi-comatose. Despite energetic treatment he passed into irreversible coma and had to be transferred to a general hospital, where he died, possibly of a cerebral abscess (no necropsy was obtained). Since he was never coöperative, effective postural drainage was impossible; penicillin was given for four days only before death, and it might seem almost pedantic to include him in the high-dosage series. It is felt that surgical drainage would not have offered any better prognosis in such a case.

Of the remaining 18 patients in the high-dosage group, 15 were completely cured, 2 became chronic in so far as they improved dramatically with abolition of constitutional symptoms and considerable diminution of sputum, but with radiological evidence of small residual cavities. One of these patients had a history of an extremely severe infection, and the other had had "low dosage" previously and had not been vigorously attacked from the outset. These patients were rapidly made fit for lobectomy, and at no time did their condition give rise to anxiety. Finally, 1 case gave radiological evidence of residual localised bronchiectasis. Whether this will cause symptoms owing to reinfection at a later date or not it is impossible to predict. This development of localised bronchiectasis is not confined to those healed medically. Of the 7 cases treated by early drainage 3 are clinically cured but have a residual symptomless bronchiectasis, and 1 other has a severe bronchiectasis involving only the area of the previous abscess in the upper lobe, with a copious purulent sputum.

Of the 6 patients in the low-dosage group only 3 were completely cured; the other 3 patients have a residual bronchiectasis, 2 producing symptoms, and 1 symptom-free.

A further consideration in the assessment of the results is the duration of disability. In the cases surgically drained the average duration of postoperative drainage before healing was twenty-eight weeks. For most of this time, certainly, the patients were out of hospital, some at work, and attending once a week for adjustment of the tube. Nevertheless this period represents a long, and, at the best, an uncomfortable and unpleasant time for the patient. The patients treated medically were out of hospital (except the 2 coming to resection) within four weeks, cured and ready for work. Even the 2 patients who had a resection were completely recovered and back at work, with the certainty of a cure, before this period had elapsed.

CONCLUSIONS

Even from this small series of cases it seems that penicillin and postural drainage can completely cure lung abscesses. The results obtained with the high-dosage scheme appear to be superior to those in the other groups. It may well be that the classification of lung abscess into acute and chronic is, from the clinical point of view, undesirable, and that all cases, whatever their duration, ought to be treated along these lines. The abscesses now being seen seem to be, on the whole, more indolent than those hitherto described, probably owing to the administration of sulphonamides and antibiotics, often in inadequate doses. These doses control the infection only partially, so that the whole pathological process is slowed down but not arrested. Diagnosis is therefore rarely possible at an early stage, and the general exhortation to drain early cannot often be implemented. This may very well explain the poor results obtained by drainage. Moreover, persistence with inadequate medical treatment itself predisposes to chronicity in so far as resistant strains of organisms are allowed to develop.

One of our chronic cases which came to lobectomy and 6 of the 7 which were drained had previously had inadequate medical treatment. It seems that the immediate institution of treatment with 2,000,000 units of penicillin a day and postural drainage is the safest course to follow; this obviates surgical drainage and promises the greatest freedom from immediate and remote complications. We feel that as energetic postural drainage and high penicillin dosage become increasingly used, surgical drainage will be regarded as obsolete; chronic complications will be minimised and those that arise will be readily curable by radical, not palliative, surgery, carried out on patients who are in the best condition to receive it.

SUMMARY

Recent tendencies in the treatment of lung abscess are reviewed.

Of 32 consecutive cases of acute lung abscess, 25 were treated by postural drainage and penicillin alone; the penicillin therapy is divided into "high dosage" and "low dosage" groups.

The numbers cured were: 15 out of 19 cases in the high-dosage group; 3 out of 6 in the low-dosage group; and 3 out of 7 cases surgically drained.

It is suggested that there is no place for surgical drainage of acute lung abscesses. They will heal under intensive medical treatment, and local complications, if any, will be treated by resection.

We wish to thank Mr. T. Holmes Sellors and Mr. Vernon Thompson for their suggestion to review these cases; the physicians of the London Chest Hospital for giving us access to the patients and records; and our colleagues who have so kindly given advice and help.

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NITROGEN METABOLISM AFTER SURGICAL OPERATIONS

USE OF A PROTEIN HYDROLYSATE AFTER PARTIAL GASTRECTOMY

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SINCE 1939 there have been numerous reports on the administration of protein hydrolysates before and after major surgical operations. Among other claims made for these preparations, it was said that with their aid the increased katabolism of protein which regularly follows injury could be largely or entirely prevented. This claim seemed to be unproven, but in some circumstances prevention of the postoperative loss of nitrogen would clearly be of great advantage. In 1946 the Protein Requirements Committee of the Medical Research Council proposed that the value of such hydrolysate therapy should be investigated, and invited us to take part in the investigation. The following report embodies some of the results we obtained in clinical trials on surgical patients.

METHODS

In all the cases a study of nitrogen balance was made involving measurement of the total intake and output of nitrogen in urine, fæces, and gastric aspirations. Though the urinary nitrogen excretion is closely related to the intake of protein and to the previous plane of nitrogen metabolism, two or more days may elapse before changes in protein intake are reflected in the urinary nitrogen excretion. The balance studies were therefore continued from some five days before the operation to ten or more days after it. Instead of pooling urine and fæces for several days, as has been done in many previous investigations, the urinary and fæcal nitrogen excretions were separately estimated every day, to obtain a more precise picture of the changes in nitrogen metabolism. Because of the difficulties involved in the separate collection of urine and fæces in women, men only have been studied.

Food of known caloric and nitrogen contents, estimated from the tables of McCance and Widdowson (1946), was provided from the diet kitchen of the Royal Infirmary, check chemical analyses being made from time to time. Unconsumed food was collected daily, and its nitrogen content was measured and deducted from the amount supplied. Urine, fæces, and gastric aspirations were collected in twenty-four-hour specimens as previously described (Wilkinson et al. 1949). Nitrogen was estimated by the micro-Kjeldahl method.

The nitrogen-balance studies were carried out on patients with peptic ulcer, because it was expected that a high incidence of nutritional disturbance would be found among them; this expectation was not realised. Partial gastrectomy was the commonest major operation in patients suitable for study.

The hydrolysate solution used was 'Casydrol' (Genatosan), prepared by the enzymic digestion of casein with pig's pancreas. This preparation is said to contain all the "essential" amino-acids in suitable proportions. We found that the solution supplied for parenteral injection contained, per 100 ml., 0·656 g. of nitrogen (0·339 g. of amino nitrogen and 0·16 g. of peptide nitrogen), 5·0 g. dextrose, and 0·3 g. of sodium chloride, its pH being 6·5.

FINDINGS IN CONTROLS

In spite of the existence of excellent descriptions of the metabolic disturbances after injury and operation, such as those of Cuthbertson (1936, 1942), it seemed desirable to study these disturbances after the particular operation of partial gastrectomy for peptic ulceration. Indeed, if there was any substance in the suggestion that underlying the "katabolic phase" there might be a pattern of amino-acid requirements and nitrogen excretion specific for different types of injury, it was essential to establish the excretion and metabolic pattern after partial gastrectomy, as Cuthbertson (1936) had done after fractures and operations on bones.

Controls Submitted to Operation

Of the 9 patients in this group, 4 had a partial gastrectomy, and for comparison 5 other patients were chosen of whom 1 was to have a vagotomy, 1 a lumbar sympathectomy, 1 a splanchnicectomy, 1 a subtrochanteric osteotomy of the femur, and 1 a spinal fusion and bone-graft.

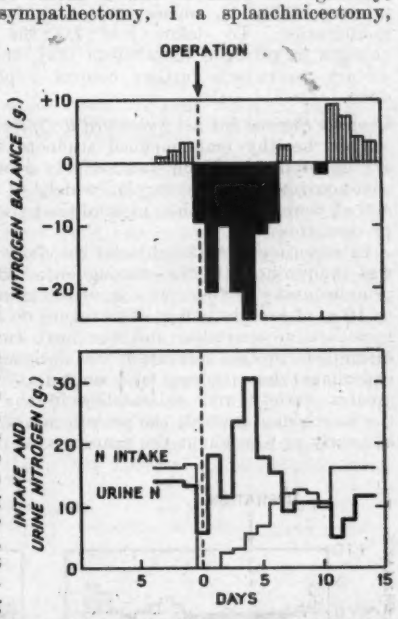

Fig. 1.—Nitrogen intake, output, and balance in case 1 submitted to partial gastrectomy.

After partial gastrectomy in well-nourished men there was an increase in the urinary nitrogen excretion (compared with the excretion during the preoperative period) lasting from five to eight days, the greatest loss of nitrogen being between the second and fifth days (fig. 1). Coupled with this increased output of nitrogen there was a reduction in the intake of nitrogen as protein food, which was most marked during the first week after operation but might be severe for up to fourteen days. The resultant of these two factors was a period of negative nitrogen balance lasting from five to eight days or more after operation, the minimum of five or six days being found in those patients whose protein and calorie intake was so rapidly increased as to reach an adequate level (70 g. of protein and 1800 calories daily) within five or six days after operation. In well-nourished patients a still more rapid increase in the food intake after operation did not shorten the katabolic phase below five or six days. On the other hand, delay in restoring an adequate food intake postponed the regaining of a positive nitrogen balance, though it did

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not alter the duration of the postoperative rise in urinary nitrogen excretion.

There are important exceptions to this general rule. In a few cases the expected big increase in urinary nitrogen on the second or third day after operation did not occur; this seemed to be associated either with undernourishment or with relatively slight trauma. The relative absence of a katabolic phase in such cases may thus be due to the patient's inability to respond to the stimulus of trauma because of existing protein depletion, or to an insufficient stimulus, or to both these factors. In assessing these possibilities the preoperative period of study is of great importance, for it indicates the level of nitrogen excretion on a particular intake of protein and calories. The urinary nitrogen excretion was increased by complications such as wound infection, bronchopneumonia and other pulmonary complications, and superficial phlebitis.

From our own findings and those published in the United States and Canada, a postoperative daily intake of at least 70 g. of protein (11 g. of nitrogen) and 1800 calories seems to be necessary for the attainment of nitrogen equilibrium. After gastrectomy the restriction of food intake varies widely in degree and duration. In the surgical charge in which the present studies were made the intake was usually similar to that shown in case 1 (fig. 1), unless some disturbance compelled modification. To define how far the postoperative changes in nitrogen metabolism may be attributed to dietary restriction further control experiments were done.

Controls Starved but not Submitted to Operation

Four healthy male medical students volunteered to act as subjects. None was actively growing, all were well-nourished though varying widely in physical type, and all were younger than most of the patients submitted to operation.

In experiment A (3 subjects) the daily calorie intake was maintained at 2500 throughout. An initial daily protein intake of 90 g. (14·4 g. of nitrogen) was reduced to 10 g. of protein (1·6 g. of nitrogen) on the day of the hypothetical operation and the next two days; this incomplete protein starvation was designed to make the experiment less rigorous and unpleasant and to allow greater variety and palatability in the diet. From the fourth day onwards the protein intake was increased as nearly as possible at the same rate as in case 1; but a somewhat higher intake of both protein and calories was achieved in the controls than in the patients submitted to operation.

In experiment B (3 subjects) the preliminary period was similar, but for three days, starting on the day of the imaginary operation, the calorie intake was reduced to 500 a day and the protein to 10 g. a day. Thereafter calories were increased step by step with the protein until the original intake of both was regained. The amount of 500 calories a day was chosen because it is the equivalent of the glucose present in 2500 ml. of 5% glucose solution, the commonly accepted desirable maximum of daily fluid to be administered intravenously. During the fast activity was limited, the subjects spending most of the day in bed but rising to defæcate; activity was later gradually increased to normal. The water intake was not limited.

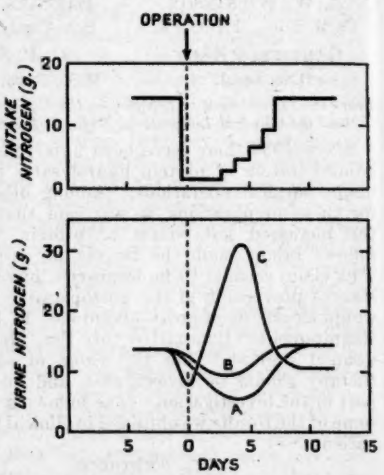

Fig. 3—Smoothed curves to show variations in urinary nitrogen excretion in controls submitted to dietary restrictions but not to operation (A and B), and in case I submitted to gastrectomy (C).

The results of both experiments in one subject are shown in fig. 2 and are typical of the two groups. When both calories and protein were restricted, the amount of nitrogen excreted daily in the urine fell from the previous 13–14 g. to 8–10 g., but rose again towards the initial level as food intake was increased from the third day onwards. When protein only was restricted there was a greater reduction in urinary nitrogen to 5 or 6 g. a day, and as the protein intake was increased the urinary nitrogen also increased. In no case in either experiment did the daily urinary excretion of nitrogen rise above the "preoperative" level. Nevertheless, it is important to note that the nitrogen balance was negative while the protein intake was low.

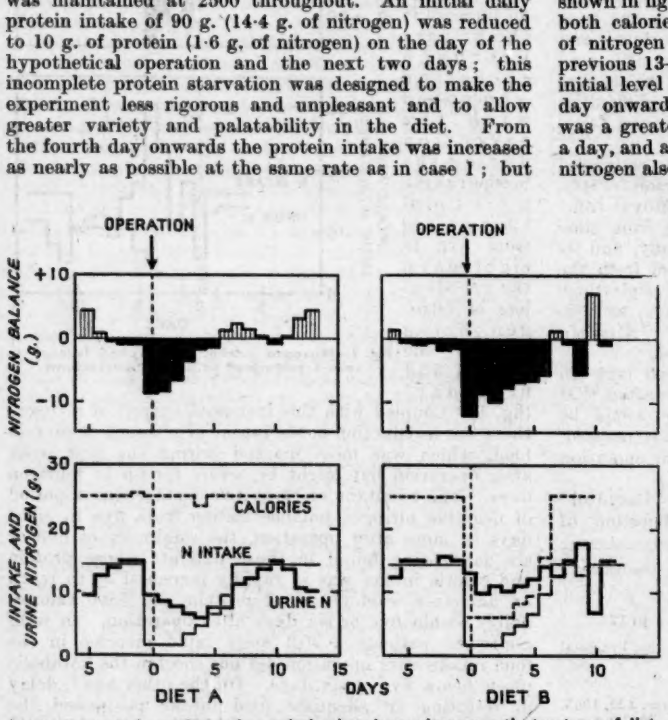

Fig. 2—Controls A and B showing variation in urinary nitrogen on the two types of diet. In this figure the "operation" is imaginary.

In fig. 3 the amounts of urinary nitrogen excreted in the two control experiments without operation and in case 1 are compared. In each kind of starvation the urinary nitrogen fell at a time when the patient submitted to partial gastrectomy combined with starvation showed a well-marked rise. It seems reasonable to conclude that, whereas the difference between the lower two curves is related to the protein spared by the maintenance of the calorie intake, the difference between the upper two curves reflects the protein katabolism resulting from partial gastrectomy in a well-nourished person. It is also evident that the quantity of nitrogen excreted in the urine is a more direct criterion of nitrogen metabolism than is nitrogen balance.

In the belief that the additional urinary nitrogen was derived from the breakdown of protein tissue, or from stores of protein

or protein-components in the body, it seemed worth while to find out whether this response to injury in man could be modified after operation by varying the protein and calorie intake.

EFFECTS OF INTRAVENOUS CASEIN HYDROLYSATE

It seemed unlikely that the katabolic phase would be affected by an intake less than that necessary for nitrogen equilibrium. Accordingly it was decided to maintain throughout the postoperative period a daily intake equivalent to 11 g. of nitrogen, administering protein hydrolysate and glucose solution by intravenous infusion until food could be eaten in sufficient quantities. The hydrolysate (casydrol) was injected at a rate of 500 ml. in three to five hours, 2–3 litres being given in each twenty-four hour period for up to four or five days after operation. These volumes of casydrol provided 80–120 g. of protein (12·8–19·2 g. of nitrogen) and 100–150 g. of glucose—i.e., up to 1080 calories, of which rather more than half was derived from carbohydrate.

After gastrectomy 4 patients each received a total of 43–70 g. of nitrogen in the form of casydrol infusions in addition to ordinary food. The accompanying table shows some of the data derived from these patients and allows comparison with the controls and with 3 other patients receiving a milk mixture. Fig. 4 shows in detail the nitrogen metabolism of one of these patients.

In the table the total postoperative period, from operation to the return of stabilised protein metabolism, has been reckoned as ten days, and the period during which the urinary nitrogen excretion is much increased as six days. In both the six-day and ten-day periods all the patients given casydrol for the first few days after gastrectomy excreted more nitrogen in their urine than the controls. Comparison of the ten-day urine nitrogen excretions in case 1 (control gastrectomy) and in cases 2–5 (receiving casydrol) shows that this additional nitrogen excreted was nearly equivalent to the quantity of nitrogen injected as casydrol. The increase in urinary nitrogen was greatest in the first seven days, as is clearly illustrated in fig. 4 (case 2), and the intravenous infusion was associated with a well-marked increase rather than with a reduction in urinary nitrogen. In this particular case the postoperative daily urinary nitrogen excretion remained higher than before operation for more than two weeks, and this was probably due to superficial venous thrombosis which developed in the second postoperative week.

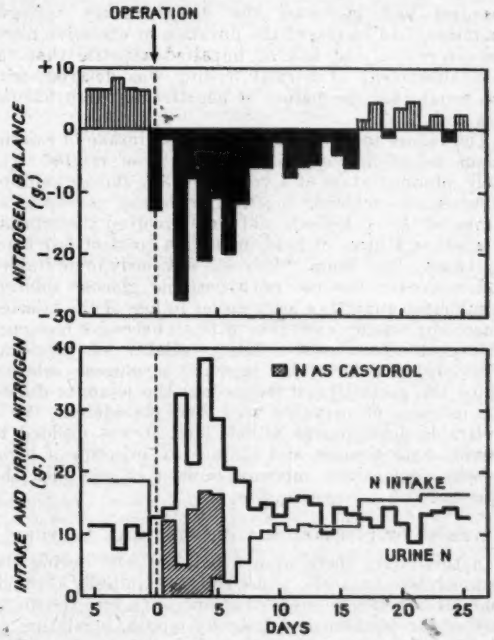

Fig. 4—Nitrogen balance, intake, and output before and after partial gastrectomy for duodenal ulcer in case 2, who was given intravenous hydrolysate for five days after operation.

Compared with other patients, those given casydrol intravenously had poorer appetites and consumed less food during the period of the casydrol infusion, and this affected their total daily calorie intake. In case 4 the calorie intake remained below 1000 a day throughout the infusion period, but in the other 3 cases the intake was 1000–1500 calories a day except on occasional single days. For the first day or two after the infusion was stopped, both protein and calorie intakes fell, but urinary nitrogen excretion continued at a high rate, and a considerable nitrogen loss resulted. In general, however, when the oral intake of food was restarted, it was possible to increase the daily quantities rapidly; nevertheless these patients were several days later in achieving nitrogen equilibrium. Hence the intravenous administration of

POSTOPERATIVE INTAKE AND OUTPUT OF NITROGEN

Case no.	Operation	Dietetic treatment	Intake of nitrogen 0–10 days			Output of nitrogen					
			Food (g.)	Casydrol (g.)	Total (g.)	Urine (g.) 0–6 days	Urine (g.) 0–10 days	Stool (g.) 0–10 days	Suction (g.) 0–10 days	Total output (g.) 0–10 days	Total negative balance (g.) 0–10 days
Control A	None	Calories constant 2500/day	72·0	..	72·0	45·1	89·1	6·7	nil	95·8	23·8
Control B	None	Calories not maintained	70·4	..	70·4	65·3	124·0	8·3	nil	132·3	61·9
Control (case 1)	Gastrectomy	Routine (as in control B)	65·5	..	65·5	107·0	147·5	8·8	7·8	164·1	98·6
Case 2	Gastrectomy	Casydrol infusion	31·2	66·8	98·0	147·4	215·6	7·6	1·8	225·0	127·0
,, 3			48·5	69·0	117·5	143·0	215·8	6·2	4·5	226·5	109·0
,, 4			53·0	43·9	96·9	126·7	205·3	4·5	nil	209·8	112·9
,, 5			56·1	70·5	126·6	144·5	223·3	3·6	2·9	229·8	103·2
Case 6	Gastrectomy	Milk mixture after operation	171·6	..	171·6	94·1	164·7	20·2	2·8	187·7	16·1
,, 7			129·7	..	129·7	104·1	144·8	9·8	4·0	158·6*	28·9*
,, 8			133·9	..	133·9	67·0*	118·0*	8·7	2·7	129·4*	+4·5*

* One specimen of urine lost, probably containing about 15 g. of nitrogen.
The postoperative periods, 0–6 days or 0–10 days, include the day of operation and the succeeding 5 or 9 days.

casydrol had increased the daily urinary nitrogen excretion, had increased the duration of excessive nitrogen excretion, and had so impaired appetite that the re-establishment of normal feeding was delayed, with the result that the period of negative nitrogen balance was prolonged.

The failure to maintain an adequate intake of calories might be an important factor in these results. The daily administration of a volume of 5% glucose solution sufficient to achieve, together with the casydrol, an intake of 1800 calories would have involved the infusion of another 4 litres of fluid, making a total of 6–7 litres per twenty-four hours. This was obviously undesirable; and moreover the use of hypertonic glucose solution in sufficient quantities leads either to loss of the injected glucose by urinary excretion or to an excessive incidence of venous thrombosis. The possibility of providing a supply of calories by injecting a glucose solution across the gastrojejunal stoma into the jejunum during the infusion of casydrol was then considered. As a preferable development of this idea, it was decided to provide both protein and calories by injecting a high-protein, high-calorie mixture (milk mixture) into the jejunum.

EFFECTS OF INTRAJEJUNAL OR ORAL MILK MIXTURE

In this group there were 6 patients who during the postoperative katabolic phase received, initially through a double-lumen tube inserted at operation into the distal limb of the jejunum and later by mouth, a mixture of whole milk, dried skimmed milk, and lactose. The mixture was prepared by adding to a pint of whole milk 120 g. of dried skimmed-milk powder, 100 g. of lactose, and sufficient water to ensure complete solution of the milk powder and lactose. These quantities provide 60 g. of protein, 23 g. of fat, and 187 g. of carbohydrate, sufficient to yield 1200 calories.

In 3 of the 6 patients the objective of maintaining an intake of more than 70 g. of protein and 1800 calories a day throughout the postoperative period was nearly achieved. The three failures were purely technical; too little mixture was injected in one; in another the large fæcal loss of nitrogen must have greatly reduced the nitrogen available for absorption; and in the third a blockage of the tube interfered with intake.

After operation, in all these patients, in spite of the large provisions of protein and calories, there was an increase in urinary nitrogen excretion, which, however, occurred a day or two later than in the patients of the previous groups (fig. 5). On the other hand, there was a much less severe negative nitrogen balance. These cases show that, even when the calorie intake is about 1800 a day, the daily administration of 70 g. of protein will not prevent the postoperative increase in urinary nitrogen excretion. However, it is evident that the jejunal instillation of whole protein accompanied by an adequate quantity of carbohydrate is less wasteful than the intravenous administration of a protein hydrolysate with inadequate quantities of glucose.

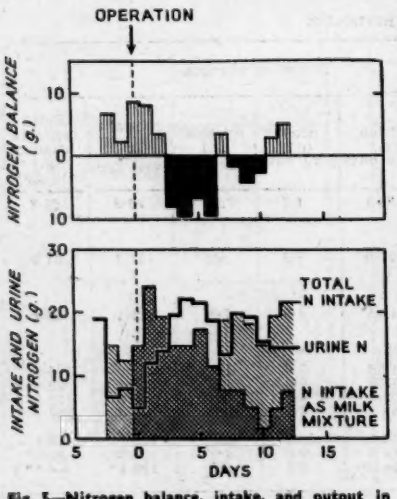

Fig. 5—Nitrogen balance, intake, and output in case 6, who was given milk mixture after partial gastrectomy.

DISCUSSION

The present investigation on well-nourished patients who had undergone partial gastrectomy has shown that an increased urinary nitrogen excretion begins on the second day after operation and lasts from five to eight days, the greatest loss being between the second and fifth days. This increase in urinary nitrogen can be resolved into three fractions: (1) due to starvation for protein; (2) due to the restriction of calorie intake; and (3) a major fraction related in some way to the operation injury. This third fraction seems also to be related directly to the initial total mass of body protein, which in turn is governed by the preceding state of protein nutrition together with factors such as previous disease.

That some part of the "katabolic phase" is due to injury and the subsequent recovery process is strongly suggested by its constant occurrence in well-nourished patients, irrespective of the food intake during the immediate postoperative period. The excessive breakdown of protein which constitutes the katabolic phase and is shown by an increased urinary nitrogen excretion rather than by a negative nitrogen balance has been found after injury and disease of the most varied kinds and in species other than man; it is not abolished by the intake of protein, even when the protein is adequately protected by carbohydrate, and is much less evident or even absent in undernourished persons with little or no protein available for katabolism. These considerations inevitably raise the question whether the katabolic phase is a pathological phenomenon to be combated by forced feeding or constitutes a fundamental biological reaction to injury. In the latter case it should be considered that the katabolic phase may even be a valuable reaction and ought not to be interfered with; at least it is associated in time with great reparative activity, it appears to do no harm, and it cannot be abolished by normal feeding methods.

SUMMARY

After partial gastrectomy and other surgical operations of similar severity in well-nourished persons there is an absolute increase in the daily excretion of nitrogen in the urine; this lasts from five to eight days, the greatest loss being between the second and fifth days.

The administration of protein (as such) or of protein hydrolysate intravenously during this period merely increases the urinary nitrogen proportionately and does not modify the "katabolic phase" in any essential way.

This increased urinary excretion does not occur in persons who are deprived of food protein but do not undergo surgical operation.

There is a negative nitrogen balance during the postoperative period, irrespective of the protein intake, and in persons who receive little or no protein but are not submitted to surgical operation.

Hence the postoperative change in protein metabolism is due partly to the usual reduction in food intake and partly to an increased protein katabolism which is inseparably associated with injury. The latter factor, the important part of the "katabolic phase," is most clearly demonstrated by the postoperative increase in urinary nitrogen rather than by the negative nitrogen balance.

We wish to thank Sir James Learmonth for providing clinical facilities and for his continued interest in the work; the four student volunteers in the control experiments; the dietitians who provided the diets; and the nurses without

whose coöperation these studies would have been impossible. A grant was made to one of us (C. P. S.) by the Medical Research Council for technical assistance and materials; and one of us (A. W. W.) held the Syme Surgical Fellowship of Edinburgh University during these studies.

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ENCEPHALOPATHY AFTER COMBINED DIPHTHERIA-PERTUSSIS INOCULATION

REPORT OF A CASE

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IN the U.S.A., where it is estimated that 2,500,000–3,000,000 children are vaccinated against whooping-cough annually, transient, serious, and even fatal neurological complications have recently been described following the inoculations. In the case reported here the child developed signs of severe cerebral damage shortly after the first inoculation with combined diphtheria-pertussis antigens. We have found only one other example of such sequelæ reported in this country (*British Medical Journal* 1949, 1950). This was a fatal case in a male infant, a twin, aged 8 months. The twins received their first dose of diphtheria-pertussis prophylactic in the morning. At 6 P.M. the boy began to cry and make strange movements with one arm. He was taken to hospital at 1.30 A.M. next day, and died an hour later. Death was ascribed to idiosyncrasy to the pertussis vaccine.

Madsen (1933), in the U.S.A., reported the death in convulsions of two newborn infants after a second injection of pertussis vaccine. Necropsy did not reveal the cause of death.

Doull et al. (1936) reported 3 cases of children with transient convulsions in a series of 496 immunisations with fluid pertussis vaccine. Taylor (1938) recorded a reaction in a boy aged 10 months who after a second dose of pertussis vaccine developed "tonic convulsions of the feet, subnormal temperature, and limpness of the legs." Transient convulsions were noted in a child by Kendrick and Eldering (1939), and in 2 children by Sako et al. (1945). Werne and Garrow (1946) reported the death of identical twins in shock sixteen and twenty-four hours after a second combined diphtheria-pertussis inoculation; autopsy showed "lesions consistent with death in anaphylactic shock with acute vascular injury as the underlying cause." This is the first paper in which the morbid anatomy has been described. Brody (1947) reported 2 cases. The first was in a boy aged 10 months who developed transient acute neurological symptoms, resembling a demyelinating lesion, after injections of pertussis vaccine. Symptoms occurred after each of four injections and at decreasing intervals. Subsequent intradermal injection of the vaccine led to generalised paralysis, dysphagia, and respiratory difficulty, and the child died of bronchopneumonia. The second case was in a child of 7 months who developed convulsions after each of three injections of pertussis vaccine, with resultant severe mental deterioration; pneumo-encephalograms showed cortical atrophy. Byers and Moll (1948) found 15 cases on scrutiny of ten years' records of admissions to the Boston Children's Hospital; of these, 1 child recovered completely, 2 died, and autopsy on 1 showed "diffuse atrophy and gliosis of the brain"; 9 showed residual cerebral damage (5 had hemiplegia and 2 were virtually decerebrate); and 3 were under observation for too short a period for final assessment. Since the publication of this paper Byers (personal communication) has seen several more cases. Toomey (1949) reported 38 cases of convulsions following prophylactic pertussis vaccination which were collected after an appeal through American pædiatric journals and from a questionnaire sent to a large number of pædiatricians. In 25 of these there was sufficient detail for analysis; 2 had died, and the rest fully recovered. Globus and Kohn (1949) report 2 cases; one child was left with severe mental damage from which he is making a very slow recovery; the other declined progressively until death.

CASE-RECORD

A boy, born on June 6, 1946, was the second child of a twin delivery (uniovular). This was a first pregnancy, and delivery was spontaneous and rapid, the second stage lasting an hour. There was no evidence of compression of the skull, asphyxia, or distress. The child was normal in health and development until the age of 2 years 4 months, when he was admitted to hospital on Oct. 3, 1948, because of a generalised convulsion. This passed off rapidly but left him with a transient right hemiplegia, from which he fully recovered in five hours, and he was discharged from hospital next day. At the time of this illness three other children in the same house were suffering from mumps, and he was diagnosed as a case of mumps encephalitis. No investigations were carried out.

On Jan. 16, 1949, at the age of 2 years 7 months, the twins were immunised with combined diphtheria-pertussis antigens. One twin remained well, but the patient developed a generalised convulsion thirty-six hours later and was admitted to hospital.

On admission, on Jan. 18, he was comatose, and his temperature was subnormal but soon rose to 101·8°F. The coma deepened, and a few hours later there were further generalised convulsions. There was no neck rigidity or Kernig's sign. The pupils were small and equal, and there was a doubtful reaction to light. The fundi were normal. The conjunctival, abdominal, and cremasteric reflexes were absent, the deep reflexes were brisk, and there were bilateral extensor plantar responses. The heart and lungs were clinically normal. The cerebrospinal fluid (C.S.F.) contained 2 lymphocytes and 21 red cells per c.mm., protein 25 mg. per 100 ml. (globulin not increased); chlorides 720 mg. and sugar 18 mg. per 100 ml. (not collected in a fluoride tube). No organisms were found. The urine was acid and contained a trace of albumin, no sugar, some acetone, and chlorides 2 g. per litre. The convulsions were controlled with intramuscular sodium phenobarbitone gr. 1. Glucose in saline solution was given rectally.

Jan. 19: the child's clinical condition remained the same. His blood-sugar was 156 mg. and blood-urea 107 mg. per 100 ml.

Jan. 20: His temperature was normal. He was in a deep sleep and was roused with difficulty. He yawned frequently. The white-cell count was 11,000 per c.mm. (polymorphs 51%, lymphocytes 32%, monocytes 14%, eosinophils 1%). Lumbar puncture was repeated; the C.S.F. was clear, under a pressure of 25 cm. of H_2O, and contained 4 cells per c.mm. (2 red cells, 1 lymphocyte, and 1 polymorph), protein 30 mg. per 100 ml. (no increase of globulin), chlorides 720 mg. and sugar 95 mg. per 100 ml.; blood-urea 87 mg. and serum-calcium 2 mg. per 100 ml.; alkali reserve 50 vols CO_2%. Wassermann reaction negative.

Jan. 21: a right hemiplegia had developed and speech was lost completely.

Aug. 5 (age 3 years 2 months): radiograms of the skull showed no abnormality. A lumbar encephalogram showed much dilatation of the left lateral ventricle (figs. 1–4).

Oct. 12: electro-encephalogram showed diminished electrical activity of the left cerebral hemisphere (fig. 5).

State on discharge (Jan. 8, 1950, at the age of 3 years 7 months).—Some speech had returned, and he had a vocabulary of about ten words. He was progressing mentally, understood much of routine living, and was coöperative in the ward, though given to tantrums. He played with other children but with little sense of coöperation. The right arm and leg

were still spastic, but the hemiplegia was diminishing, and he could walk without aid or support. A right homonymous hemianopia was present, but it was impossible to plot detailed visual fields.

DISCUSSION

Neurological complications are known to have followed the injection of pertussis antigen and combined diphtheria-pertussis antigens, but we have found no record of such complications following immunisation against diphtheria alone. It seems probable that the pertussis antigen was the cause of the sequelæ in the present case.

Among the suspected causes a specific toxin has been suggested. Bordet and Gengou (1906) suspected such a product of *Hæmophilus pertussis* in their original description of the organism, but it seems unlikely that such a toxin would survive in a properly aged vaccine, and few workers now support this theory.

In discussing constitutional predisposition, Byers and Moll (1948) emphasise the high incidence of a family history of neurological disorders in their cases and the fact that 12 of their 15 patients were males.

Toomey (1949), from the evidence he has collected, recommends that no child should be given pertussis vaccine if there is a family history of convulsions or if the child has a history of convulsions or other illness of the central nervous system, either present or past.

Ferraro (1944), from his own observations and from the published work, favours the view that an antigen-antibody reaction is the cause. The morbid anatomical findings of Werne and Garrow (1946) support this view. Brody (1947) states "it would seem likely that what is involved here is some sensitisation phenomenon" and emphasises the family history of allergy in his cases.

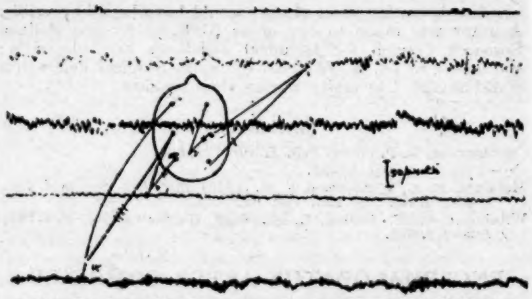


Fig. 5—Electro-encephalogram showing diminished electrical activity of left cerebral hemisphere.

He suggests that the mechanism resembles that of the neurological complications of erythroblastosis fœtalis, where there is a "plugging of the small cerebral vessels by agglutinated red cells . . . agglutinated as a result of a sensitisation phenomenon."

Many of the cases reported have occurred after a second or subsequent injection of the vaccine; in some there has been a history of previous convulsions. In the present case the convulsions followed the first inoculation (pertussis vaccination), but there had been a convulsion three months previously, when other children in the household had mumps.

Complications of pertussis vaccination are extremely rare, but the results are so serious that, until the prophylactic value of such vaccination is established beyond doubt, it may be desirable not to vaccinate a child in whom there is any suspicion of the stability of the central nervous system as shown by the personal or family history. If there is any untoward reaction to the first injection, no further injection should be given.

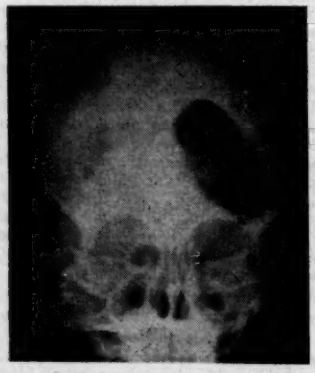
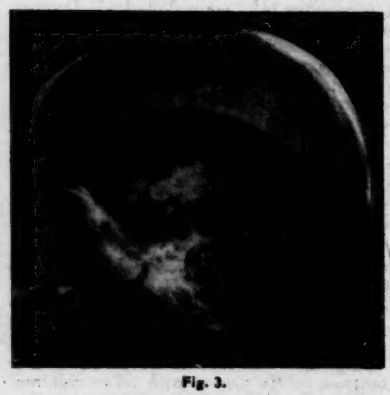


Fig. 1.

Fig. 2.



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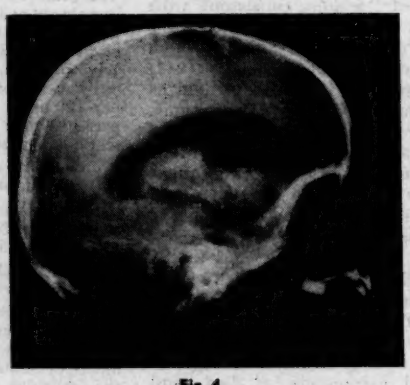

Fig. 4.

Figs. 1–4—Encephalograms showing left lateral ventricle much dilated.

SUMMARY

Severe neurological complications are described in a boy aged $2^1/_2$ years who developed convulsions thirty-six hours after the first injection of combined diphtheria-pertussis antigens.

Investigations made eight months later showed dilatation of the left lateral ventricle and diminished electrical activity of the left cerebral hemisphere.

A year later there was some recovery, but the patient still had a small vocabulary and was mentally retarded.

The pathogenesis is unknown, but in view of the reports of serious neurological complications it is suggested that pertussis vaccination should not be done if there is a history of convulsions in the child or the family; if there is any untoward reaction

to the first injection further vaccination should be abandoned.

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THE EFFECT OF REST IN BED ON PLASMA VOLUME

AS INDICATED BY HÆMOGLOBIN AND HÆMATOCRIT LEVELS

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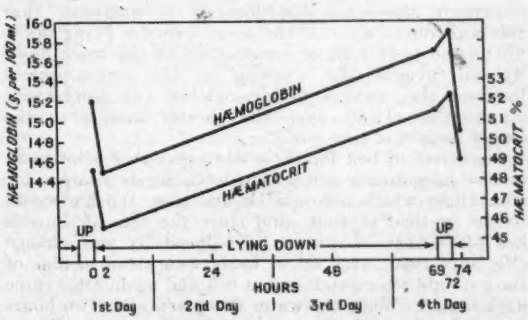
IT has been known at least since Böhme's work in 1911 that a change from the vertical to the horizontal posture produces a fall in serum-proteins and hæmoglobin levels, and that a change from the horizontal to the vertical has the reverse effect. The alterations in serum-proteins and hæmoglobin occur within two hours, and it has generally been assumed that the values then reached are stable and do not change until the posture is altered once more. Widdowson and McCance (1950), however, found that the rise or fall in the circulating elements usually reached a maximum within two hours after the change of posture and the serum-protein, hæmoglobin, and hæmatocrit levels tended to return towards their original values in the next twelve hours or so. Further studies, with undernourished persons, showed that rest in bed led at first to a fall in protein, hæmoglobin, and hæmatocrit, but that after two hours these levels began to rise again, so that after three days they were no lower than before the persons went to bed. This increase in concentration could not be explained by loss of œdema fluid as measured by changes in body-weight.

Some experiments have therefore been made on well-nourished men and women, and the results are set out here. The previous experiments on undernourished persons are also mentioned.

MATERIAL AND METHODS

The subjects of the experiments were hospital patients whose complaints (hernias, indefinite gastro-intestinal troubles, &c.) were not likely to have any effect on the volume or composition of their blood. They were admitted to hospital at noon, and blood was at once withdrawn with a minimum of stasis. The subjects next undressed and lay quietly in bed for two hours, when a second sample of blood was collected with the same precautions as before. For the next sixty-seven hours the subjects remained in bed, with not more than two pillows, and on the morning of the third day after admission blood was again collected from some of the subjects, who then got up and stood and sat about in the wards till noon, when a fourth sample of blood was withdrawn. The subjects next lay on their beds again for two hours, when the fifth and last specimen of blood was taken. The other subjects were bled only once on the third day, and did not get up until the third and final sample of blood had been collected in the afternoon, at a time corresponding to the second specimen on the first day. A standard light midday meal was given on the test days.

For the determination of hæmoglobin and hæmatocrit, coagulation of the blood was prevented by adding to each 10 ml. of blood 0·02 g. of a mixture of two parts of potassium oxalate and three parts of ammonium oxalate. For the determination of serum-proteins the blood was collected without anticoagulant and was centrifuged within an hour of collection.



Variations in hæmoglobin and hæmatocrit levels induced by changes of posture and by three days' rest in bed.

Hæmatocrit was determined by centrifuging for 45 minutes at 3000 r.p.m.

Hæmoglobin was estimated by Gibson and Harrison's (1945) method. Both hæmoglobin and hæmatocrit were determined on the day the blood was collected.

Serum-proteins were estimated by precipitation with tungstic acid and subsequent digestion with sulphuric acid, copper selenide being used as catalyst. The nitrogen was determined by the micro-Kjeldahl technique (see Laboratory Techniques 1950).

CHANGES IN HÆMOGLOBIN, HÆMATOCRIT, AND SERUM-PROTEIN LEVELS IN 10 SUBJECTS AFTER LYING IN BED FOR TWO HOURS AND FOR THREE DAYS

Case no.	Sex	Hæmoglobin (g. per 100 ml.)			Hæmatocrit (%)			Serum-proteins (g. per 100 ml.)		
		On admission	After 2 hours' lying	After 3 days' lying	On admission	After 2 hours' lying	After 3 days' lying	On admission	After 2 hours' lying	After 3 days' lying
1	M	14·8	14·2	14·8	47·2	44·6	48·5	6·57	6·57	6·84
2	M	15·6	14·8	16·7	50·0	46·8	54·4	8·00	7·42	7·41
3	M	12·3	11·4	12·6	39·9	38·9	39·6	7·70	7·18	7·42
4	F	13·9	13·3	14·5	43·6	40·8	44·3	8·02	7·46	7·78
5	F	15·2	14·3	15·2	46·5	43·5	46·5	7·43	6·81	7·23
6	F	14·0	13·5	13·5	44·7	42·5	43·9	7·78	6·87	6·71
7	F	13·4	12·8	13·7	41·4	40·8	41·6	7·68	7·37	7·16
8	F	13·7	13·0	14·0	44·4	43·0	44·3	7·40	7·16	7·23
9	M	—	14·1	15·2	—	44·8	49·6	—	6·62	6·64
10	M	—	14·5	15·8	—	46·0	51·4	—	6·47	6·97
Averages:										
First 8 only ..		14·1	13·4	14·4	44·7	42·6	45·4	7·58	7·10	7·22
All 10 persons ..		—	13·6	14·6	—	43·2	46·4	—	7·00	7·14

RESULTS

The accompanying figure shows the average changes in the hæmoglobin and hæmatocrit levels of two subjects from whom blood was taken on five occasions, and the accompanying table the levels found in ten subjects who were bled when they were first admitted to hospital, after they had been recumbent for two hours, and after they had been in bed for three days. It will be seen from the figure that, after the well-known effect on the hæmoglobin and hæmatocrit levels of lying down for two hours, the values rose again over the next sixty-seven hours and were slightly higher on the morning of the fourth day than they had been on admission. They rose a little further when the subjects were up and about for a few hours in the morning, and after this period in the upright position they fell again when the subjects lay down. Though this fall was large and would certainly not have taken place had the subjects not got up, the final levels were still higher than those found after the subjects had been lying down for two hours on the day of admission. The net effect of three days' recumbency was therefore a rise in the hæmoglobin and hæmatocrit levels, which almost certainly was an expression of a fall in the volume of the plasma. These results are confirmed by the data in the table. It will be seen that the changes in serum-protein were less than those in the hæmoglobin and hæmatocrit, and not always in the same direction. It is suggested that this was due to some of the serum-proteins being taken up by the body cells or metabolised in the three days. At all events the changes in the serum-protein followed the changes in hæmoglobin and hæmatocrit much more closely over the shorter than over the longer periods of time.

Since rest in bed for three days produced alterations in the hæmatocrit and hæmoglobin levels comparable with those which follow a change from the horizontal to the vertical position, and since the rate of diuresis has often been shown to be reduced by this change (McCance 1950), 1200 ml. of water were given to nine of the patients after two hours in bed and again after three days in bed. When the water was given after two hours in bed the average volume excreted in the next five hours was 1268 ml., and when it was given after three days in bed the average volume was 1274 ml.; hence it may be concluded that, though three days in bed reduced the plasma volume it did not reduce the diuretic effect of water.

DISCUSSION

These observations are in entire accord with those made on undernourished men in Germany (Widdowson and McCance 1950), and it is evident that lying in bed for three days raises the hæmatocrit and hæmoglobin levels of well-nourished as well as of undernourished persons. The figure shows that the reasons for the changes are undoubtedly very complicated, for (1) protracted recumbency has exactly the opposite effect of short-term recumbency, and (2) *after* protracted recumbency a change to the vertical position for a few hours somehow alters the conditions so that a large and characteristic fall in concentration is observed when the person once more lies down.

It is generally assumed that the changes which take place in the two hours after a change of posture are the result of alterations in the volume of plasma, and possibly the increased concentrations which follow three days in bed are to be explained in a similar way by a fall in the plasma volume. If this is so, it remains to explain why the plasma, which appears to increase in volume during the first two hours after lying down, should then decrease in volume over the next three days. Posture and inactivity are probably both involved in these changes, and the secondary rise in concentration may be the result of protracted inactivity rather than of recumbency *per se*. This could be tested by making the persons take exercise in the recumbent position, but so far this has not been attempted. It seems desirable, however, to call attention to these results now, since the early effects of a change of posture on the constituents of the blood are at last becoming widely recognised, and their significance has been emphasised in assessing the true levels of hæmoglobin and serum-protein (Committee on Hæmoglobin Surveys 1945). It is evident that the protracted effects of recumbency may be equally important, and it cannot be assumed that lower values for hæmoglobin and serum-proteins will be found in blood taken when a person is recumbent than in blood taken from the same person when he is up and about. They may be quite as high in the recumbent as in the upright position if the person has been in bed for some days.

SUMMARY

When normal persons rested in bed for two hours their hæmoglobin, hæmatocrit, and serum-protein levels fell in the expected way; but if the rest was continued for three days the levels rose again to their original height.

Similar effects had previously been observed in undernourished persons.

It is suggested that this secondary rise in the concentration of the circulating elements may be the result of inactivity rather than recumbency.

The diuretic effect of 1200 ml. of water was not altered by three days in bed.

We are indebted to Dr. M. Shutter and Miss L. A. Thrussell for assistance in the collection of the samples of blood.

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DEOXYCORTONE WITH ASCORBIC ACID IN MENTAL DISORDER

SOME CLINICAL AND LABORATORY FINDINGS

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Hench et al. (1949) found that treatment of rheumatoid arthritis with adrenocorticotropic hormone (A.C.T.H.) or 'Cortisone' often caused euphoria. Lewin and Wassén (1949) reported benefit in rheumatoid arthritis from giving deoxycortone and ascorbic acid together. We have tried Lewin and Wassén's technique in the following cases:

Schizophrenic psychoses	13	(2 of less than one years' duration.)
Depressive psychoses ..	17	(11 " " " " " ")
Manic psychoses ..	4	(3 " " " " " ")
Neuroses	3	
Rheumatoid arthritis ..	1	
Angioneurotic œdema	1	
Normal individuals ..	6	
Total	45	

The dose of deoxycortone varied from 2·5 to 10 mg., and after the first few trials it was always injected into the thigh muscles, three or four inches below the greater trochanter. The dose of ascorbic acid was always 1·0 g. intravenously.

CLINICAL RESULTS

Schizophrenic psychoses.—The 2 cases of less than a year's duration showed immediate benefit and have since maintained their improvement.

Before treatment both showed retardation of thought, and thought disorder at times amounting to "blocking." Both were lonely and asocial and suffered from derealisation-depersonalisation syndrome. Both showed anergia and emotional shallowness. After the combined injections, both showed rapid changes within thirty minutes; they became easy in social converse, showed more emotional depth, lost their anxious preoccupation with feelings of unreality, and became energetic and helpful in the ward. One of them, who had had auditory hallucinations and delusions of reference, developed full insight into these, and lost the feeling that time was "painfully fast" of which he had complained. He had 3 treatments and the other patient had 4; and, though the first treatment was followed by relapse in about a week, they have now remained well without further treatments in the past twelve weeks.

The single treatments given to the schizophrenics with a history of more than twelve months produced no changes that seemed significant.

Depressive psychoses.—In the 11 cases of less than a year's duration there were well-marked changes, whereas only 1 of the 6 chronic patients showed significant and lasting changes. The clinical changes noted were generally a feeling of well-being, amounting in some cases to euphoria, a decrease of retardation of thought, and an increase of activity and sociability. Delusions and hallucinations, which became much less prominent early in treatment, were not, however, lost, and tended to become prominent again as the patient relapsed. However, it was found that they were much less concealed during the phase of improvement, and it was possible to discuss them amicably with the patient. In general, a dose of 2·5 mg. deoxycortone was found more effective than one of 5 mg. A dose of 10 mg. was usually depressing: one patient complained bitterly of feeling worse than ever he had before. In the early stages of treatment, relapse usually took place within two days. As a rule, patients could be improved again by another treatment; but in 3 depressives with considerable amounts of neurotic reaction improvement failed to appear with later injections. In 1 case treatment failed on the fifth occasion, and in the other 2 on the third occasion. These failures occurred in spite of the patient's considerable confidence in the treatment.

In 1 chronic case the patient showed an initial striking improvement, into euphoria out of a state of misery and lethargy, an hour after the treatment. This improvement lasted twenty-four hours but was succeeded by a phase of more intense depression with the addition of negativistic and aggressive features. Further treatments failed to lift him out of this state, and recourse had to be made to electro-convulsion therapy (E.C.T.) before improvement set in again.

In 4 of the cases where treatment was persisted in on each relapse, there was a maintained remission; 1 patient has died from bronchopneumonia but the other 3 have had no treatment now for twelve weeks, without relapse. One of these is a man with chronic depression of twenty years' standing.

Our general impression from these cases and others now under treatment is that the patients do well if they have a history of less than twelve months, and if there is not a large neurotic element in their condition. A notable feature of the positive reactions has been their similarity to those following E.C.T. Of 12 patients who benefited previously or subsequently from E.C.T., 11 also showed benefit from deoxycortone with ascorbic acid. The 4 patients in this series who had E.C.T. without benefit did not improve on deoxycortone and ascorbic acid.

Manic psychoses.—2 patients with less than a year's history showed temporary great improvement following treatment. The improvement consisted in a feeling of calm ("loss of energy") and reduction of activity, aggressiveness, elation, and garrulousness. Improvement lasted one or two days. Both these cases benefited also from intensive E.C.T. One other case of less than a year's duration, who had previously responded temporarily to intensive E.C.T., did not show any response to deoxycortone and ascorbic acid. The fourth case, of longer standing, improved with neither method.

Neuroses.—Only 1 patient improved (still well after three months). The other 2 showed no change.

Somatic disturbances.—Deoxycortone with ascorbic acid was given to 2 members of the staff suffering from rheumatoid arthritis and angioneurotic œdema.

A woman of 51, who for three months had been under treatment at a general hospital for rheumatoid arthritis, had made very little improvement, and had considerable pain and stiffness in the left shoulder, elbow, and hand. There was wasting of the interossei in the left hand, and considerable swelling of the finger-joints. She displayed anxiety-tension and pessimism about her illness. At the time of her first injection she had a "streaming cold"; ten minutes later her colour was better, pain and stiffness rapidly began to leave the joints, mobility quickly returned, the rhinorrhœa disappeared, and she experienced considerable euphoria, amounting perhaps to elation. That night she was unable to sleep, being full of hopeful plans about the future. The first remission lasted eleven hours; treatment was resumed whenever relapse set in, and now, after 13 treatments, she has apparently completely recovered, having had no injections for the past five weeks. There has been no rise of blood-pressure during treatment, and weight has not increased. There appears to be a slight increase in the amount of hair on the legs, but no other changes. Emotionally she is now alert, confident, and optimistic.

The second patient was suffering from angioneurotic œdema involving face, scalp, ears (with watery otorrhœa and partial deafness), and scrotum. He was anxious, irritable and preoccupied with his condition. Half an hour after the first treatment all œdema had vanished, and he was quite elated. This elation was noted particularly by his family when he arrived home that evening. It prevented him from sleeping on the first night. Remission lasted from one to three days, and after 3 treatments he has remained well for three months.

Normal individuals.—Effects on normal people were either nil, or only subjective. One of us (E. H. C.)

TABLE I—CLINICAL RESULTS WITH DEOXYCORTONE AND ASCORBIC ACID

Condition	No. of cases	Under 12 months' duration			Over 12 months' duration			Ratio of response to E.C.T.*	No. in remission following this treatment alone
		No.	+++ reaction	Other reactions	No.	+++ reaction	Other reactions		
Schizophrenia	13	2	2	—	11	0	1 ++ 1 +	0/2†	2
Depression	17	11	10	1 Nil‡	6	2	4 Nil	11/12	4§
Mania	4	3	2	1 Nil	1	0	1 Nil	2/3†	—
Neuroses	3	0	—	—	3	1	2 Nil	—	1
Rheumatoid arthritis	1	1	1	—	—	—	—	—	1
Angioneurotic œdema	1	1	1	—	—	—	—	—	1
Normal	6	—	—	2 +	—	—	—	—	—

\+ = Subjective feelings of relief without definite objective changes.
++ = Some subjective and objective changes not lasting twenty-four hours.
+++ = Marked subjective and objective changes lasting more than twenty-four hours.
++++ = Changes so great as to reverse the clinical picture.
Nil = No change either subjective or objective.

* Ratio of response to E.C.T. means the number of patients actually benefiting from deoxycortone with ascorbic acid—i.e., Deox.-Asc., who also benefited from E.C.T., shown as a ratio of the number of patients benefiting from E.C.T. who also were given deoxycortone and ascorbic acid.

† Benefit from E.C.T. was only obtained from intensive E.C.T.

‡ This man was considerably improved after twenty-four hours, but it is impossible to be sure whether it was due to deoxycortone and ascorbic acid.

§ One patient died from bronchopneumonia four weeks after last treatment.

TABLE II—LABORATORY FINDINGS

Patient	Diagnosis	Treatment	Result §	Eosinophils per c.mm.				Urinary uric-acid/creatinine ratio			
				Basal	2 hr.	4 hr.	Max. change	Basal	2 hr.	4 hr.	Max. change
1	Depression	Ascorbic	Nil	135	142	130	−4%	0·36	0·34	0·38	5%
		Deoxycortone	++	164	148	156	−10%	0·29	0·32	0·33	14%
		Deox.-Asc.	+++	138	125	64	−54%	0·28	0·38	0·49	75%
2	Depression	Ascorbic	Nil	346	362	350	5%	0·31	0·34	0·32	10%
		Deoxycortone	Nil	324	316	304	−6%	0·39	0·27	0·20	−48%
		Deox.-Asc.	+++	369	312	221	−40%	0·34	0·41	0·72	112%
3	Depression	Ascorbic	Nil	184	225	205	18%	0·47	0·43	0·30	−36%
		Deoxycortone	Nil	218	204	162	−26%	0·26	0·41	0·53	104%
		Deox.-Asc.	+++	208	187	86	−54%	0·19	0·87	0·54	358%
4	Schizophrenia	Ascorbic	+	114	98	87	−24%	0·35	0·44	0·49	43%
		Deoxycortone	Nil	100	100	112	12%	0·30	0·47	0·47	56%
		Deox.-Asc.	+++	164	93	104	−43%	0·33	0·77	0·71	115%
5	Normal	Ascorbic	Nil	194	225	244	25%	0·62	0·63	0·56	−10%
		Deoxycortone	Nil	431	369	336	−22%	0·36	0·38	0·44	22%
		Deox.-Asc.	Nil	334	319	325	−5%	0·49	0·48	0·67	37%
6	Depression	Deox.-Asc.	+++	124	65	49	−60%	0·36	0·61	0·69	92%
7	Hypomania	Deox.-Asc.	+++	130	82	51	−61%	0·54	0·79	0·76	46%
8	Depression	Deox.-Asc.	+++	156	131	75	−52%	0·29	0·95	0·63	227%
9	Rheumatoid arthritis	Deox.-Asc.	+++	330	270	327	−33%	0·30	0·65	0·82	173%
10	Mania	Deox.-Asc.	+++	270	160		−41%				
		Intensive E.C.T. (3 G.M.s)	++++	324	136	80	−75%				
	Mild depression	Ascorbic	+	320	172	121	−62%	0·24	0·72	0·78	225%
11	Depression	Deox.-Asc.	Nil	189	164	172	−13%				
	Mild depression	E.C.T. (1 G.M.)	+++	114	75	41	−64%				

§ Key as under table I All reductions shown as −.

experienced no notable change with the usual dosage. With a dosage of 10 mg. deoxycortone in the combined treatment, after half an hour there was a feeling of irritability, anxiety, fatigue, and precordial oppression. The diastolic pressure rose from 90 to 120 mm. The symptoms abated in four hours. In the third experiment 2·5 mg. was used; after fifteen minutes there were feelings of euphoria coupled with tranquillity, whilst a colleague reported that there seemed to be a reduction in the psychomotor activities. Another normal subject noted similar changes after the standard treatment. No changes were noted in the other 4 normal individuals.

Side-effects.—All the early cases in this series had frequent observations of the blood-pressure and pulse, after the injections. Only when the dosage of deoxycortone exceeded 5 mg. was any rise in the blood-pressure noted, and most of the depressives showed a slight fall. None of the patients showed any notable gain in weight. No investigations of blood sodium or chloride were made.

E.C.T.—Of the patients who reacted positively to deoxycortone with ascorbic acid, 2 were given E.C.T. during this investigation, to compare the clinical and biochemical changes. One was a case of mania and one of depression, and their improvement after E.C.T. was rather greater than their improvement after deoxycortone and ascorbic acid.

Summary.—The clinical results are set out in table I.

LABORATORY INVESTIGATIONS

To test whether the changes following treatment were due to the elaboration of a cortisone-like substance, a number of patients, both positive and negative reactors to the treatment, were investigated for changes in the eosinophil count, and the urinary uric-acid/creatinine ratio. These investigations were carried out under basal conditions with standard biochemical techniques, and the results are shown in table II.

Blood and urine specimens were taken from the patient at the time of the injection, two hours after the injection, and then four hours after. Hæmatocrit estimations, were carried out on all blood specimens. Only one (no. 9), showed any change, 54 in the basal value and 43 and 42 in the next two values. The others were of normal value and remained the same throughout.

DISCUSSION

It will be seen that in all but 1 case the +++ reaction was associated with a fall of at least 40% in the eosinophils. In the case (no. 9) where the fall was lower (33%) there was a change in the hæmatocrit value and a 173% plus change in the urinary uric-acid/creatinine ratio. When the reaction was below +++ the maximum fall of the eosinophils was 26%. With a +++ reaction all cases showed a rise of urinary uric-acid/creatinine ratio of at least 75%—except case 7, in which the eosinophil fall was 61%. When the reaction was below +++ the maximum rise in the ratio was 56%, except in case 3 where it was 104%; but the corresponding eosinophil fall was only 26%.

These findings strongly suggest that a cortisone-like substance is formed in the body by the interaction of deoxycortone and ascorbic acid, because only the 11–17 oxysteroids have this joint action of reducing the eosinophils and increasing the urinary uric-acid/creatinine ratio. American workers have suggested that E.C.T. acts through adrenal stimulation via A.C.T.H. (Altschule et al. 1949a and b). In our cases 10 and 11 the effects of E.C.T. were rather stronger than those of deoxycortone with ascorbic acid, which supports the above hypothesis. It is interesting to note that ascorbic acid alone, given in case 10 three days after the completion of a course of intensive E.C.T. (2 grand-mals a day for three days), produced a change just as great as any recorded with deoxycortone and ascorbic acid together. Perhaps the injected ascorbic acid replaced the ascorbic acid which had been metabolised during the intensive stimulation of the adrenal cortex by E.C.T. This would serve to stimulate adrenocortical activity again.

Le Vay and Loxton (1950) have shown in experiments that deoxycortone and cortisone may act peripherally. However, the effects we observed on the eosinophils and on uric-acid excretion, suggest in addition a central action—e.g., on the adrenal cortex itself.

Selye (1947) has pointed out the antagonism between deoxycortone and cortisone; and it may well be that the varying effects we have reported are due to antagonism between the cortisone-like substance formed and the deoxycortone left unchanged. Thus, injected ascorbic acid may convert some of the endogenous desoxocortisone (Selye 1950) into cortisone-like substance [see Brownlee (1950) on beneficial effects of ascorbic acid alone in normal animals], or, alternatively, injected deoxycortone may react with endogenous ascorbic acid to produce the cortisone-like substance.

Further work may show that it is possible to regard some psychotic states as an "exhaustion stage" in Selye's "alarm—adaptation syndrome" (Selye 1946) with the typical syndrome reduction of adrenocortical activity. Important American work already has demonstrated that, in chronic schizophrenics, there is often "adrenal unresponsiveness" both to A.C.T.H. and to stress (Pincus et al. 1949).

In conclusion, we wish to emphasise that the primary aim of these investigations was not formulation of a new therapy, but rather to note any changes that might follow administration of these substances. It appears to us now that there is justification for proceeding to cautious systematic trials of varying therapeutic régimes along these lines.

SUMMARY

1. Deoxycortone with ascorbic acid, given as suggested by Lewin and Wassén, has been tried in 45 persons of whom 37 had mental disorder, 2 had somatic disorder, and 6 were normal.

2. In general, mental cases with histories under twelve months showed euphoric reactions, whose effects were beneficial and in some cases led to a good remission.

3. The fall in eosinophil counts, and the changes in the urinary uric-acid/creatinine ratio, associated with response to this treatment, suggest that it causes, in the body, the production of a cortisone-like substance.

4. There has been a close correlation between the reaction of patients to this form of treatment and to electro-convulsive therapy.

We wish to thank Dr. H. Weil-Malherbe, director of research at Runwell Hospital, for advice and help in the carrying out of this investigation, and Mrs. P. R. Kent for help in the presentation of the results and setting out of the paper.

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Medical Societies

ROYAL SOCIETY OF MEDICINE

The Newer Antibiotics

THE section of experimental medicine met on March 14, with Prof. G. W. PICKERING in the chair.

Prof. ROBERT CRUICKSHANK traced the development of modern chemotherapy through the work of Ehrlich, Domagk, Fleming, Florey, Dubos, and Waksman. The bacteriologist had played a great part in this development and he also played a great part in the daily use of these new remedies. He must identify the organism responsible for the illness, test its sensitivity, and advise on the most suitable chemotherapeutic agent. Professor Cruickshank reviewed some of the antibiotics from four aspects:

Therapeutic effectiveness.—The relative sensitivity of the different organisms to the different drugs in vitro was no sure guide to their therapeutic efficiency in vivo. Thus in vitro polymyxin was very active in preventing the growth of Salmonella organisms, but it had proved disappointing in the treatment of typhoid; on the other hand *Pseudomonas pyocyanea* often responded well to polymyxin when applied locally.

Pneumonia might be due to numerous different organisms, which differed in their response to the main antibiotics; for rational therapy the organism should be identified. In some cases the organism, when isolated, might appear in the laboratory to be resistant to penicillin (or to some other antibiotic), but this did not always mean that a therapeutic response was unobtainable; when the dose of penicillin was increased from 100,000 to 4 million units per day, a rapid clinical improvement often ensued. Moreover, sometimes the pathogenic organisms were located in a relatively inaccessible site, and, to reach such a site, it might be necessary to drench the tissues with antibiotic.

To evaluate the true value of any new drug, carefully controlled trials were necessary. Good examples of such trials had been those of streptomycin organised by the Medical Research Council. The Council was now arranging trials on whooping-cough, infantile gastro-enteritis, pneumonia of children and of adults, and other infections.

Toxicity.—The drug might cause local irritation of the stomach—for example, large doses of 'Aureomycin' might cause nausea and vomiting. In this connection, it might be questioned whether starting treatment with a loading dose was really desirable, particularly in chronic infections, such as brucellosis.

There might be allergic reactions to the drug itself or to bacterial products suddenly released; hitherto this had not happened much with either chloramphenicol or aureomycin. There might also be definite toxic effects on the tissues. Thus streptomycin tended to damage the labyrinth and auditory apparatus; and it had been suggested that 'Chloromycetin' tended to cause abnormal fatigue in the muscles and ophthalmoplegia. The antibiotic might eliminate valuable bacteria from the intestine or respiratory tract, leading to the loss of valuable vitamins—e.g., vitamins B or K—or to the establishment of undesirable secondary organisms.

Finally, drug resistance might develop, as in tuberculosis treated with streptomycin; it had not yet been seen in typhoid treated with chloramphenicol.

Ease of administration.—Chloramphenicol and aureomycin could be given by mouth whereas penicillin was usually given by injection. But penicillin could be given by mouth if desired, using large doses (e.g., 1 g.) administered on an empty stomach. This was particularly effective for young children; and even with adults enough was usually absorbed to produce a good response.

Cost.—Weight for weight penicillin was cheaper than chloramphenicol and aureomycin; but these could often be administered to patients at home, whereas a course of injections with penicillin required admission to hospital. In this light chloromycetin and aureomycin were often less expensive than penicillin.

Among the disadvantages of the newer antibiotics must be reckoned the bitter taste; but in children under 1 year the taste-buds were not fully developed and so they did not object to the taste, and children older than 4 years could usually swallow capsules. Another disadvantage of these drugs was that their action was bacteriostatic rather than bactericidal, as was proved by the tendency of some infections to relapse after treatment had ceased; perhaps it might be possible to reinforce their action with antiserum.

The value of these drugs for meningitis, especially when due to Pfeiffer's bacillus, was still uncertain. Unfortunately nothing had yet been found which would sterilise carriers of typhoid or similar organisms. Urinary infections due to *Proteus* or *Ps. pyocyanea* were still difficult to treat. Apparently psittacosis and trachoma responded well to chloramphenicol and aureomycin,

and it was reported that herpes zoster and herpes simplex also responded. But these substances had no effect in smallpox or chickenpox. There was still much scope for further study of these remedies and for further new ones with a different range of action.

Dr. R. LEWTHWAITE described the work on chloramphenicol which had been done in Malaya by the American team. This work began with Prof. J. E. Smadel's discovery that rickettsial infections in fertile eggs could be cured by this compound. With the cordial welcome of the Malayan government he went to Malaya in 1948, taking with him one pound of chloramphenicol, which represented almost the total world supply at that time. Scrub-typhus was a virulent infection spread by a mite (*Trombicula dehliensis*) living in the grass; and the disease had caused serious casualties among our troops during the Burma campaign. The mortality was usually about 15%. The response of scrub-typhus to chloramphenicol was dramatic; within forty-eight hours of the beginning of oral treatment the clinical condition improved greatly.

Experiments were made to see if chloramphenicol would have prophylactic action, the drug being given while volunteers were exposed to infection. As long as the drug was being given, scrub-typhus did not develop; but about 10 days after the end of treatment almost all the volunteers fell ill with the disease. Further work showed that the disease could be prevented if chloramphenicol were given once weekly, continuing for several weeks after exposure to infection. During this time symptoms of incipient scrub-typhus might appear, but they were cut short by the next dose. The drug did not kill the rickettsiæ, but it prevented their multiplying until at last the body could deal with them itself.

Typhoid fever also responded to chloramphenicol (a discovery which had since been amply confirmed elsewhere). If the treatment were continued for less than 9 days, relapse often occurred; and so Smadel recommended that treatment should continue for at least 12 days. Unfortunately chloramphenicol did not prevent the patient becoming a carrier; nor did it free him from the organism when he had become a carrier.

Among other infections, gonorrhœa was readily cured by chloramphenicol, and patients might lose all symptoms within 1–2 days of taking a single oral dose. More recently Dr. A. J. Boase had reported from Uganda that trachoma responded very well too aureomycin, given by instillation; apparently it also responded well to chloramphenicol. If these findings were confirmed (as was expected) this would be a development of the greatest importance, since trachoma was very common and very troublesome in most of the warmer parts of the world.

Prof. J. M. SMELLIE spoke about the treatment of infantile gastro-enteritis—a condition which had been the subject of much research for many years and which still caused about an eighth of the deaths in the first year of life. Possibly a virus was concerned in the ætiology. At present, treatment was mainly symptomatic, with an attempt to correct dehydration and electrolytic disturbances. Hopes had been raised by sulphonamides, penicillin, and streptomycin; but each in turn had failed. During the past eight months, chloramphenicol had been used to treat 27 children (mostly under 6 months old) at the Children's Hospital, Birmingham; of these, 17 were critically ill at the start, and had to be given intravenous alimentation. Each was given a minimum of $2^1/_2$ oz. of fluid per lb. body-weight per day. The dose of chloromycetin was 75 mg. per lb. per day in divided doses every 3–4 hours, the dose being mixed with a little syrup and given by a teaspoon. Despite the bitter taste, there was no difficulty in persuading the children to swallow it. Treatment usually lasted 10–12 days. In all but one of the cases (a hopeless one from the start) the clinical condition improved appreciably within 1–2 days of the administration of chloramphenicol. Diarrhœa abated, pyrexia (when present) ceased, and the toxæmia diminished. In a few of the patients a superimposed parenteral infection was also present, but this also responded well to the chloramphenicol. Untoward reactions to the drug were few. In some cases the infants suffered from sore buttocks, but this was probably not due to the drug. In 2 a cutaneous eruption was seen—one a generalised papular type of urticaria, and the other an allergic dermatitis of the buttocks and groins.

The assessment of any treatment of infantile gastro-enteritis was very difficult since the disease itself varied greatly in severity and intensity. But, even by the most cautious estimate, the results obtained with chloromycetin were more promising than any which had been achieved with other chemotherapeutic and antibiotic remedies.

Dr. E. N. ALLOTT said that 21 cases of typhoid fever had been treated with chloramphenicol at Lewisham Hospital. Some were given 20 g. during 48 hours. Others received the course recommended by Smadel—i.e., a loading dose of 4 g. followed by 1·5 g. twice daily until symptoms stopped, and then a maintenance dose for a total of 12–14 days. The relapse-rate was equally high whichever course was followed, but all the relapses responded well to further treatment. Relapses tended to occur 11–15 days after the end of treatment; this was also the incubation period. He suggested that short courses should be given and repeated at the time when a relapse might be expected—i.e., after 10–11 days.

Chloramphenicol in Typhoid Fever

At the meeting of the section of epidemiology on March 17, the discussion was opened by Dr. W. H. BRADLEY, president of the section, who was in the chair.

Dr. Bradley recalled that it was Smadel's success with chloramphenicol in typhoid fever that led the Ministry of Health to ask Parke, Davis & Co. to import some of the drug for a trial in this country. An outbreak at Crowthorne, Berkshire, provided the first opportunity, and a preliminary note on the early findings was published in THE LANCET a year ago (1949, i, 869). Shortage of the drug and the condition of some of the patients led to changes in the plan for this trial, and eventually chloramphenicol had to be used in "control patients" to save life. The outbreak was due to *Salmonella typhi* of phage-type E.1. In his preliminary communication Dr. Bradley stated that after resolution of temperature when chloramphenicol had been given for 8 days, recovery appeared complete. This proved not to be so, for subsequently 6 of the 12 treated patients, and also 6 of the 12 untreated cases relapsed. In the treatment of these relapses the effect of chloramphenicol was again dramatic and consistent. On the advice of Dr. R. Lewthwaite, treatment was continued for several days over the eight originally proposed by Woodward; this seemed to prevent relapses, but in Smadel's more recent experience treatment for eighteen days was guarantee against relapse. Woodward had suggested that relapses were particularly common in patients treated with this drug, but Dr. Bradley was not satisfied that this was so. There might be better ways of preventing relapses than merely continuing the treatment longer. A clearer picture of the natural history of relapses was needed; Dr. Bradley's impression was that they occurred with a fairly regular periodicity, and it might be wise to give a short second course at the time when relapse might be expected. Alternatively, more intensive treatment early in the disease, or (improbably) a boosting dose of vaccine or a course of serum might reduce the incidence of relapses. In the treatment of

the 70-odd moderately severe cases in the outbreak originating from the R.M.S. *Mooltan*, Dr. Bradley suggested that Dr. Armstrong should use massive doses comparable with those which Gray gave in whooping-cough. The results seemed no better than with the original Woodward dosage—in fact, there were little "flicks" in the temperature charts not observed with the smaller dosage; and signs of muscle weakness (blurred vision, for example) appeared, confirming Gray's observations. It was, however, learnt that patients with severe typhoid could be given 20 g. in two days without undue risk.

There was no doubt about the value of chloramphenicol in typhoid. The disappointing feature was its failure to prevent the development of the "chronic carrier" state. Thus in one case, although two courses of chloramphenicol had been given, the stools were still positive on discharge from hospital on the 83rd day. So far the the drug had failed, even in massive doses, to clear chronic carriers. However, hope should not be given up of applying chloramphenicol, "using some cunning and at present unsuspected technique," to the prevention of the carrier state and the cure of the carrier.

Dr. R. A. GOOD described the results in the Crowthorne cases treated at Winchester. The 5 men and 8 women admitted were divided, by the alternate case method, into 6 treated with chloramphenicol and 7 controls; later 2 of the controls were given the drug as a life-saving measure. The temperature fell in 72 hours in all the treated cases, but an equal number relapsed in the two groups; the relapses occurred about the 35th day in the treated cases and about the 25th in the untreated. One of the treated cases, a woman of 24, who had had T.A.B. vaccine during the war, developed a chronic carrier state.

Dr. A. L. K. RANKIN described 18 cases admitted between May, 1949, and January, 1950; 10 of them were from Crowthorne. Altogether, 13 primary or relapsed cases were given chloramphenicol; one of these patients, a man of 77, died. No toxic or side effects of the drug were observed, and no increased resistance to chloramphenicol was demonstrable in the organisms. The prognosis of typhoid, Dr. Rankin recalled, was progressively less favourable in elderly patients. In this series a third of the patients were over 58, and apart from the one man admitted in a hopeless condition, all recovered. He felt that chloramphenicol was responsible for this result in at least some of the cases. Given in adequate doses, chloramphenicol was most effective. It also eased the strain on the nursing staff, although the success of any treatment of typhoid still largely depended on the efficiency and enthusiasm of the nurses.

Dr. R. LEWTHWAITE described 2 relapses among his early patients in Malaya, and referred to Woodward's "interrupted" method of treatment, as described by Smadel, in which the drug was given for five days, then treatment was stopped for five days, and then the original course was repeated. Even after eighteen days' treatment, relapses would still happen occasionally; when the morbid anatomy of the disease was considered, this was not surprising. Dr. Lewthwaite was pleased that the synthetic drug worked as well as the one made by fermentation.

Dr. STANLEY WHITE added that chloramphenicol was the only antibiotic which it was possible to synthesise on a practical basis. Smadel considered that its action was bacteriostatic, not bactericidal, but some workers would not accept this statement in its entirety. Assuming that Smadel was right, it followed that unless the drug was given in sufficient amount over a sufficient time, there were going to be relapses. The method now advocated was to give a total of 30 g. over not less than a fortnight. When a relapse occurred, it responded even more dramatically than the primary attack to chloramphenicol therapy, presumably because the defence mechanism was already in action. In Smadel's opinion there was no reason to believe that the carrier state would develop more often in patients who had had chloramphenicol than in those who had not. Dr. White advocated large doses in paratyphoid. Chloramphenicol interfered with carbohydrate metabolism, and affected vitamins B_1 and B_2 and nicotinic acid; vitamin K might also be involved. A possible explanation was that chloramphenicol not only sterilised the upper respiratory tract but killed the organisms which synthesised the B group; therefore one should give large doses of vitamin-B complex when treating any infection with chloramphenicol.

Dr. C. F. L. HILL described the results in 21 cases from the *Mooltan*, 10 being given a short course of chloramphenicol (an initial dose of 4 g. followed by eight-hourly or six-hourly doses of 2 g.), and 11 a longer course (an initial dose of 4 g. and then 20–35 g. over nine to eighteen days). There was no significant difference in the relapse-rate of the two groups, relapse occurring in about half of the cases. It might be possible to suppress a relapse by giving a further course of the drug ten days after the completion of the first course. He was not convinced of the efficacy of the two-day course.

Dr. C. K. MCDONALD, discussing blood-cultures and stool-cultures, said it would be helpful if there could be some standard method of assaying the drug in the blood. There did not seem to be any chloramphenicol-resistant strains of *S. typhi*.

Dr. D. C. LIDDLE spoke of the outbreak of typhoid at Salford in October, 1949. Of 20 patients admitted to hospital, 17 were treated with chloramphenicol. Two of them died—a man of 58 whose death was primarily due to arterial thrombosis, and a man of 40 who was given a five-day course. His temperature settled and he seemed well, but a fortnight before he died he complained, once only, of a pain in the calf, and he died of pulmonary embolism. In the first case no organisms were found in the bile but they were present in the spleen, bone-marrow, and liver. In the other the organisms were present in the bile, spleen, and lungs, but not in the liver. The patient who had organisms in his bile had been excreting them in his fæces; the one who had none in his fæces was found to have none in his bile. Relapses occurred in 5 inadequately treated cases. All the cases who developed complications were those who had been partially treated. Some patients were given a full course, and he had formed the impression that a thorough course, lasting over fifteen days, was necessary to prevent complications. Whenever chloramphenicol was given, a patient should have his blood-sedimentation rate estimated before being allowed up. The patients responded so rapidly to treatment that they tended to become euphoric about the 3rd or 4th day, but they should not get up before they were fit to do so.

Dr. STANLEY BANKS, discussing the question of chloramphenicol's bacteriostatic or bactericidal action, said that though Smadel considered it to be the former, there was some clinical evidence of the latter. The French had noted the psychiatric reaction which might be thought to be in the nature of a Herxheimer reaction, due to rapid killing of the organisms. He mentioned a case of paratyphoid B in a child in which chloramphenicol appeared to have no effect, though the French seemed to have found that it had the same effect as in typhoid. The interference with vitamins B and K in the gut was a point in favour of intermittency of treatment.

Dr. IAN TAYLOR produced some figures in relation to relapse-rates. In the Croydon outbreak of 341 cases, the relapse-rate was 20% and the case-mortality 15%. At Bournemouth 495 cases produced 38 deaths and "a few" relapses. It did seem that the consistent finding

of a relapse-rate of 50% in cases treated with chloramphenicol was abnormal.

Prof. ROBERT CRUICKSHANK said that the methods for assaying the drug in the blood were at best crude; he thought the best was with the agar-diffusion method. Dr. Liddle's evidence about the organisms in the gall-bladder was interesting. When one was dealing with a drug which could not get into the gall-bladder, one would not expect it to sterilise the bile, and excretion of organisms from the gall-bladder would continue. It would be interesting to know if the carriers had fully functioning gall-bladders. If not, this might be why one did not obtain a cure in these cases.

Dr. LIDDELL replied that in the two carriers he had mentioned, the gall-bladders were examined, and it was found that the dye-stuff was not excreted in these cases. It did appear that delay in emptying the gall-bladder had something to do with the carrier state.

Dr. WHITE remarked that chloramphenicol appeared in the bile in conjunction with another substance which rendered it inactive and which was broken down on reaching the gut. In mice chloramphenicol had been given with sulphadiazine, but he did not know of this being tried in man. In the laboratory the drug appeared to be bacteriostatic in vitro, but if combined with a specific antiserum it was bactericidal. Chloramphenicol had been successful in a chimpanzee at the Dublin Zoo when its pneumonia had not responded to penicillin; but the president had implied that chimpanzees and other animals were not likely to receive much chloramphenicol in this country while the Ministry of Health continued to control it and it was in short supply.

Reviews of Books

An Autobiography

Sir ARTHUR KEITH, M.D. Aberd., F.R.S. London: Watts. 1950. Pp. 703. 25*s*.

A BOOK by Sir Arthur Keith about his work and himself is not likely to be dull, and this one has most of the qualities which go to make good autobiographical writing. Though not a diary, it is clearly based on one, and it has a Pepys-like sincerity in what he writes of the man he sees in himself. Of his faults he is a merciless critic—faults, it is safe to say, which have seldom been apparent to his many friends and admirers. He is like Pepys too in the skill with which he selects the dramatic incident of the moment.

Thus of his presidential address to the British Association in 1927: "I could evoke no response from the sea of faces in front of me—only a stolid attention; and the feeling grew within me that I was committing the most heinous sin possible from a platform—boring my audience." Hastily he cut his address short, jettisoning his most treasured paragraphs.

A visit by the Prince and Princess of Wales to the museum of the Royal College of Surgeons led to a duel of will between Sir Henry Morris, the president, and Sir Frederick Treves, the courtier. Morris was determined that the royal party's attention should be called to the specimen of the first stone removed from a kidney—his own contribution to the advance of surgery. Treves was equally determined that it should be passed by in silence—and it was.

Like Pepys too, he can sketch his opinion of his contemporaries in a phrase, as when he says of Havelock Ellis, his neighbour in the country, "I never made that projected call and since reading his biography I believe I decided rightly," or of Lord Moynihan, "Lady Moynihan loved the shade and he the sunlight," or of Elliot Smith, "I strove for coöperation but somehow it developed into rivalry."

Perhaps to some it is the story of Keith's boyhood on the Aberdeenshire farm and of his early struggles in London which will most appeal. When he set out from home to seek fame and fortune, it was one Willie Murray who drove him in the cart to the station. "In after years, if any honour came my way, I could always count on a letter from Willie reminding me that it was he and his dung cart which launched me on my career." The book is long and diffuse, intermingling records of domestic events, anatomical investigations, and self analysis; but it will be read.

Occupational Eye Diseases and Injuries

JOSEPH MINTON, F.R.C.S., ophthalmic surgeon to the Hampstead General Hospital; lecturer on industrial ophthalmology at the Royal Institute of Public Health and Hygiene. London: Heinemann Medical Books. 1949. Pp. 184. 21*s*.

Mr. Minton has spent some years on the study of industrial eye problems, and the results of his investigations are set down in this book. The subject matter falls into three parts—industrial eye accidents and how they may be avoided, industrial lighting, and the employment of persons of defective eyesight in industry. Industrial eye accidents often end in the law-courts, and many case-histories are quoted to illustrate the awards of these courts; it is evident that the author's sympathies are—commendably but not always impartially—with the injured man. (Would all agree, for instance, that with a detached retina coming on "a few months" after a cut on the eyebrow, there was "no doubt" that the one was due to the other?) The book will be helpful to industrial medical officers, showing them the methods employed in different factories both in preventing and in treating eye accidents.

Diagnosis of Pancreatic Disease

LOUIS BAUMAN, M.D., formerly assistant professor of clinical medicine, Columbia University, New York. Philadelphia and London: J. B. Lippincott. 1949. Pp. 74. 40*s*.

THIS monograph on pancreatic function tests and their application in the diagnosis of pancreatic disease is based upon the author's 25 years' experience at the Columbia-Presbyterian Clinic, New York. The difficulties and errors inherent in estimating pancreatic function have held up progress in this important problem for many years, and though more recent work on the purification of secretin, and analysis of pancreatic secretion, have greatly advanced knowledge, the book does not suggest much headway. Dr. Bauman gives an account of some 550 pancreatic function tests, using 'Mecholyl' as the pancreatic stimulant; but though his case findings are given in detail it is not easy to find that he has drawn any conclusions of outstanding clinical application. Two short chapters, one on fat-absorption in pancreatic deficiency, and one on serum-amylase estimation, are also included.

Round the Fountain. Pieces from *St. Bartholomew's Hospital Journal*, 1893–1949. (5th ed. Pp. 243.)—In 1893 the various hospital clubs at Barts merged into a students' union with a single monthly journal as its official organ and its rendezvous round the fountain which stands athwart the path, used by Rahere, from the Smithfield to the Little Britain gate. In the centre of the quadrangle, says a modern historian rather unkindly, is a fountain where students are accustomed to sit and gossip away the fine summer days. That they gossip with insight and charm is clear from this gallimaufry (or medley), as the editors call it, which is an essential documentary of the light-hearted side of hospital life.

Perspectives in Neuropsychiatry (H. K. Lewis & Co., 1950. Pp. 236. 15*s*.).—Prof. F. L. Golla succeeded Sir Frederick Mott as director of the Central Pathological Laboratory at the Maudsley Hospital, and later took his present appointment as director of the Burden Neurological Institute at Bristol. This little book, designed by some of his associates and past pupils to honour his 70th birthday, carries a collection of fourteen stimulating essays on neuro-psychiatric subjects, each signed by a distinguished name. The subjects chosen range through cerebral anatomy, electro-encephalography, the biochemistry of cerebral function, the endocrinology of mental disturbance, the concept of the schema in neurology and psychiatry, the relation of mind and matter to personality, and psychiatric genetics, to forensic psychiatry, aims and methods of treatment, and mental hospital problems. Dr. Derek Richter has edited the collection and contributes one of the essays. All have a background of hard thinking, and ask as much from the reader.

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THE LANCET

LONDON: SATURDAY, MARCH 25, 1950

The Collings Report

Dr. COLLINGS, whose report on the present state of English general practice we publish this week, is a young Australian who had previously studied medical work in his own country, in New Zealand, in Canada, and in the United States. His one-man reconnaissance of a territory so often surveyed by its inhabitants may seem unnecessary or even impudent; but a single scout sometimes learns more than a party, and the chief features of a countryside are often picked out most easily by a stranger. COLLINGS had the advantage of knowing other comparable countrysides, but he has looked on England with fresh eyes. His report is quite unlike the compilation of a committee; if it lacks the kind of wisdom attained by compromises and qualifying clauses, it has the merit of saying plainly what he saw and what he thinks. His capabilities as observer and commentator are obvious: indeed in presenting such a report he presents his own credentials.

On what he saw, he concludes that "the over-all state of general practice is bad and still deteriorating." In industrial areas, where the demand for good medical care is greatest and most urgent, practice "has reached a point where, despite the efforts of the most conscientious individual doctors, it is at the best a very unsatisfactory medical service and at the worst a positive source of public danger." Conditions of work are sometimes such as to change a good doctor to a bad doctor within a short time, thus neutralising much of the sound teaching of the medical schools. Paradoxically, practice is worst in close proximity to large hospital centres and "improves in both scope and quality almost in proportion to the distance away from those centres." But even in the country districts present-day practice "remains an anachronism, though one which has retained many of the virtues of the past." The National Health Service Act has increased the load on general practice and at some points has caused serious strain; but "many of the shortcomings attributed directly to the Act are the result of basic weaknesses," and "blame rests on the service only in so far as it has failed to provide the means of reinforcing general practice, so that it can take the new load."

To anyone accustomed to think of the English general practitioner, and English general practice, as the best in the world, these blunt statements from an outside observer come as a surprise; and they raise two questions: (1) were the 55 English practices examined a fair and representative sample, as COLLINGS believes, and (2) has he assessed them accurately? Those interested will need to read the report before reaching an opinion. Statistically, of course, the 55 practices are a small sample, and they were not selected at random: hence it is quite possible that an unduly large proportion of unsatisfactory ones were seen. More important, however, is the question whether the estimates formed after a period of one to four days "sitting in on" the practice were sound. Doctors who identify their own practices, and the far larger number to whom the criticisms might equally well apply, will often feel that a partial view has been taken; that the best features of their work have been ignored while insignificant details have been emphasised; that the essentials of medical care have little to do with filing-cabinets and examining-couches; and that wrong impressions can easily be gained from a few hours' observation under somewhat artificial conditions. They may say, with some reason, that for COLLINGS, as an Australian, the ideal general practitioner seems to be a man equipped and ready to deal with anything five hundred miles from anywhere; whereas in England, with its hospitals and specialists, the G.P.'s rôle is different. But those who read his report carefully will find him expressing as much admiration as disapproval. They will note, too, that the criticism is professional, not personal, and is directed almost always against the system and not the people working it. Some of the practices he criticises most strongly are run by the doctors whom, as men, he most respects. Of the industrial areas he writes "it is neither my purpose nor my desire to defame the overworked and often conscientious doctor who has to suffer the indignities of this way of working." If some feel that the picture is painted in colours too dark, or with contrasts too sharp, let it be remembered that the artist's aim is neither to praise nor to blame, but to display these indignities that they may be removed. They may or may not be as widespread as he supposes, but the fact that they exist at all calls for determined action.

"I regard the errors," COLLINGS says, "as merely symptoms of the chronic illness of general practice today"; and he reviews the causes of this illness. For several decades general practice has adapted itself to the growth and development of hospital, specialist, and other medical services; but "this process has resulted in the decline rather than the progressive evolution of general practice, and in wide departure from both the idea and the ideal of family doctoring." The scope and interest of the practitioner's work has steadily contracted. The local-authority services undertake much that was once in his charge: though supposedly complementary to the practitioner, they are in fact substitutes for him. The hospitals, in excluding him from their staffs and removing patients from his ken, have gone far to isolate him professionally and depress his standards. More and more the specialist invades general practice, the latest invaders being the pædiatrician ("nothing seems to be too menial for him") and the geriatrician, both of whom seek responsibility for whole age-groups of society. The current tendency, as COLLINGS sees it, is always to compensate for deficiencies in general practice, by extending the activities of specialists and hospitals. "This trend has been going on for a long time: but if it continues it is bound to result in over-compensation, unnecessary expense, further dehumanising of medical care, and ultimately the elimination of the general practitioner as a responsible person."

Here some will say: "But none of this is new. Does Dr. COLLINGS imagine that we don't know it?

Has he never heard of the Medical Planning Commission, and the British Medical Association's constructive evidence to the Goodenough Committee and its notable reports on health centres and on medical education, all of which have shown awareness of the need for upgrading general practice? " To which COLLINGS might fairly reply that he is not compiling other people's opinions but expressing his own. He might point out that the actual effect of the admirable sentiments expressed by the B.M.A., by Medical Planning Research, by *The Lancet*, and by so many other people, during the past ten years has evidently been precisely nil, since the state of general practice (he found in 1949) was bad and still deteriorating. And he might add that, though for the first time deliberate planning of our medical services as a whole is possible, the fate of general practice is now being decided—unintentionally, but rapidly and remorselessly—by people who know and care little about it. " It is being determined mainly by the people responsible for hospital and specialist development, and in terms of compensation for recognised, or half-recognised, deficiencies, instead of the correction of these deficiencies." The situation has in fact become critical.

For some time we have been trying to draw attention to this situation. At the beginning of last year we wrote :

> " . . . there are evidently two schools of thought. The first holds that under modern conditions medicine dwells in the hospitals, where alone accurate diagnosis and scientific treatment of major illness is possible. According to this school the emphasis of the new service should be on hospital and specialist services, which will deal with all the illness that matters, and the rôle of the general practitioner is chiefly to feed the hospitals. The second school, on the other hand, regard the investigation and treatment of major illness as secondary to the enormous task of relieving the troubles of everyday life, and of helping people to pursue health : the heart of medicine, they feel, is in general practice, and it is at least as important to have really good general practitioners, bringing medicine to the home, as it is to provide pleasures and palaces for patients who qualify for institutional care. Polemics apart, all will agree that the two parts of clinical medicine are complementary, and that what we have to do is to strike a suitable balance between them ; but there certainly seem to be special reasons at present why the hospital school should not be in the ascendant." [1]

Within the profession there is indeed a very real, if unavowed, difference of opinion : on the one hand are those who see no future for the general practitioner except as an appendage to the hospital service, while on the other are those who believe he must be brought back to his former position as a highly responsible doctor. Somewhere between these opposites are those who hold, by no means unreasonably, that ideally the practitioner should concern himself less with organic disease and more with elementary psychotherapy and preventive medicine. Whoever is right, it is certain that the development of the National Health Service cannot be rationally planned without a clear idea of what the function of the practitioner is and should be ; and this is the subject that should now be uppermost in the minds of those responsible for the service—not least, perhaps, the Central Health Services Council. Our own opinion that the practitioner must be a man who knows and practises medicine [2] is supported by COLLINGS's argument that, within the present cultural pattern, " the doctor's ability to establish rapport with his patient, and thus place himself in a position to cope with psychological problems, rests largely on his ability to handle physical diseases—not only the minor physical disorder but also, to a great extent, the major one." It is further strengthened by Dr. LESLIE COLE's contention in last week's *British Medical Journal* that the discovery of new and effective remedies, whose immediate administration may mean so much to the patient, has greatly increased the clinical responsibility of the man whose task it is to detect the disease and take initial action. Maybe Dr. COLLINGS is taking an Australian view when he would like to see every practitioner exercising many different skills ; but as a minimum we should surely demand conditions under which doctors can and will examine their patients. Can we not also go further and restore the practitioner to his position as the person in medical charge of the case ? Always down the breeze comes the siren song of the specialists, *Anything you can do I can do better* ; but, as COLLINGS says, we should " firmly resist the conclusion that therefore we must keep on fractionating and specialising." More and more, as the years go by, it is seen that patients need to have some one doctor looking after them ; and that is the reason behind COLLINGS's " reactionary thought " that " the patient, as a person, is better off receiving his medical attention through the undeveloped New Zealand service than he will ever be through any highly developed service depending chiefly on hospitals and specialists."

There is also an economic argument. As we said a few weeks ago, " in terms of expenditure, the cheapest form of medicine is preventive medicine ; the next cheapest is efficient care of patients in their homes ; and the most expensive is hospital treatment." [3] COLLINGS points out that, " quite apart from human values, it is doubtful whether the policy of concentrating on hospital and specialist care is economically justifiable or even possible, and its hazards will certainly not be lessened by drifting into it." He holds that our programme should be based on the premise that as many people as possible should be kept *out* of hospitals. But there is at least enough truth in his picture of existing practice to show that changes in its character and conduct will be required if we are to put more rather than less responsibility on the general practitioner. The principal change COLLINGS proposes is a rapid development of professional grouping. His other premise, that medical care should be integrated not fractionated, is related to this because he holds that continuity of medical care " cannot be achieved unless the general practitioner assumes high-level responsibility in a wide range of activities " and that often he cannot safely do this unless he is working with others. " Even the most elementary steps towards organising the present chaos of individual general practice must result in improved medical service and a fairer deal for doctor and patient," and COLLINGS urges that these steps should be taken now, without waiting for some possibly distant future when local authorities may be ready to build the kind of health centres some of them have in mind. In this he is undoubtedly right ; and, though it would be most unwise to put pressure on

1. *Lancet*, 1949, i, 25.
2. *Ibid*, p. 571.
3. *Ibid*, Jan. 7, p. 27.

unwilling practitioners to form a group, it is at least equally unwise not to encourage those who want to form one. This kind of spark needs to be fanned, not watered. Perhaps nothing in the report is more significant than the story of the keenness shown by the Scottish practitioners when they got together at their local hospital of a Saturday afternoon.

In conclusion we would say this. The report is the work of one man, necessarily reflecting his predilections, and therefore open to criticism. But if it condemns much in general practice today it also demonstrates the value of general practice to the public, and the need for positive effort if this value is to be preserved. "General practice as we know it could, if we wished, be converted into general practice as we like to imagine it." But do we wish it? The issue is placed squarely before us, and our reaction should be constructive rather than merely defensive. The Collings report, coming at so critical a time, is a major challenge, demanding that we should think straight and act accordingly. We have to decide what the general practitioner should be doing, and then—whatever it is—enable him to do it properly.

Diet in Hypertension

DESPITE almost fifty years' intensive investigation, the therapeutic value of diet in hypertension is still undecided. This is largely because of confusion of thought on three aspects of the problem. In the first place, as AYMAN [1] points out, there is a tendency to overlook the natural history of hypertension, a disorder characterised by wide variations in blood-pressure, and changes in pressure well within the normal range for hypertensives have been taken to indicate that a particular diet is effective. If this error is to be avoided, observation must be continued over many years. The second confusing factor is the lack of careful differentiation of essential hypertension from hypertension secondary to renal disease, particularly nephritis. The third factor is the confusion between essential hypertension without heart-failure and essential hypertension with heart-failure. Thus improvement in hypertensive heart-failure resulting from a low-sodium diet has often been taken to indicate improvement in the hypertension, whereas all that has happened is that the heart-failure has been controlled.

Most attempts to control hypertension by diet have been based on either a low-sodium or a low-protein intake. The low-sodium diet was first popularised by AMBARD and BEAUJARD [2] in 1904, and received a new lease of life from ALLEN'S [3] work in America. ALLEN, who is still an ardent believer in his régime,[4] emphasised the importance of sodium restriction, whereas other workers put the emphasis on sodium chloride and often regarded the chloride radicle as more important than the sodium. One of the difficulties attached to very low sodium diets, which ALLEN always appreciated, is that in hypertension associated with renal disease sodium restriction may lead to renal failure and that it is therefore contra-indicated in nephritic hypertension. The rôle of dietary protein in hypertension has been debated for twenty years. SAILE [5] compared the diet and blood-pressure in monks of the Carthusian and Carmelite orders with those in Benedictine and Franciscan monks, the first two being vegetarians whereas the second two are not. SAILE found that the systolic blood-pressure in the vegetarian monks was on average 30–40 mm. Hg lower than among the non-vegetarian monks. In England HARRIS [6] was a keen advocate of low-protein diets; but few workers have been able to confirm his results. The work received fresh impetus in the late war from observations on the effect of semistarvation. In Leningrad during the siege the number of cases of hypertension diminished, whereas in the next two years, when food became more plentiful, hypertension became a major medical problem.[7] These observations were confirmed experimentally by the Minnesota experiment of KEYS and his colleagues.[8] Among 34 healthy young men submitted for six months to a 1600-calorie diet containing 49 g. of protein, the mean systolic blood-pressure fell by 11·1% and the diastolic by 7·7%. In Budapest, on the other hand, KOHÁRI-KUCHÁRIK [9] found no change in the blood-pressure of 39 patients with essential hypertension after the ten months of rigorous dietetic restriction (predominantly protein) which the city underwent in 1945.

Fresh interest in the effects of diet has been raised by KEMPNER'S enthusiastic reports on his rice diet in hypertension.[10] This diet, which has been described as "combining practically all the theories that have been advanced for the dietary treatment of hypertension, being low in sodium (200 mg.), low in protein (20–25 g.), low in fat (5 g.), and restricting fluid intake to 800–1000 ml.," [11] consists mainly of rice and fruit juice. In this country it has received a measure of official sanction since the requisite amount of rice can be obtained by patients on presentation of a medical certificate. The diet is ingeniously comprehensive, but neither its originator nor his followers are clear whether it is to be used for the treatment of (*a*) essential hypertension, (*b*) nephritic hypertension, or (*c*) hypertensive heart-failure. Renal failure has arisen through its indiscriminate use, and the original claim that it produces nitrogen balance has been disproved by SCHWARTZ and MERLIS.[12] Even those who say that it causes a significant fall in blood-pressure add that careful supervision is necessary [11]; and others have recommended modifications.[13] In one of the more careful studies, SCHROEDER and his co-workers [14] found no appreciable response to the diet in 13 cases of severe hypertension: "In general, when the disease was relatively advanced and treatment was mandatory neither restriction in salt nor the rice diet appeared to be of much benefit." The position has been ably summed up by KEYS and his colleagues [7]:

"... few workers familiar with the Kempner and similar diets will deny that patients frequently cannot or will

1. Ayman, D. *J. Amer. med. Ass.* 1949, **141**, 974.
2. Ambard, L., Beaujard, E. *Arch. gén. Méd.* 1904, i, 520.
3. Allen, F. M., Sherrill, J. W. *J. metab. Res.* 1922, **2**, 429.
4. Allen, F. M. *J. Amer. med. Ass.* 1949, **141**, 976.
5. Saile, F. *Med. Klin.* 1930, **26**, 929.
6. Harris, J. C., Aldred, C. N., Hawthorne-English, A. G. *Lancet*, 1935, i, 1327.
7. Brozek, J., Chapman, C. B., Keys, A. *J. Amer. med. Ass.* 1948, **137**, 1569.
8. Keys, A., Henschel, A., Taylor, H. *Amer. J. Physiol.* 1947, **150**, 153.
9. Kohári-Kuchárik, J. *Amer. J. med. Sci.* 1950, **219**, 27.
10. Kempner, W. *N. Carolina med. J.* 1944, **5**, 125.
11. Loofbourow, D. G., Galbraith, A. L., Palmer, R. S. *New Engl. J. Med.* 1949, **240**, 910.
12. Schwartz, W. B., Merlis, J. K. *J. clin. Invest.* 1948, **27**, 406.
13. Lichtwitz, A., et al. *Sem. Hôp. Paris*, 1950, **26**, 256.
14. Schroeder, H. A., Goldman, M. L., Futcher, P. H., Hunter, M. *J. Amer. med. Ass.* 1949, **140**, 458.

not adhere to such restrictions. Out of the Minnesota and Leningrad experience grows the possibility that such a patient may be worse off when he modifies or abandons his dietary restrictions than he was before the treatment was initiated . . . . Patients so selected [i.e., for the Kempner diet] should be warned beforehand that once instituted the regimen must be followed carefully, and that modification, particularly if sudden, may be dangerous."

For the practising clinician, the position seems to be as follows. The one definite indication for dietetic restriction in hypertension is obesity. There is overwhelming evidence [15] that the prognosis in the obese hypertensive is worse than in the hypertensive of normal or subnormal weight. Every obese hypertensive should therefore be given a moderate reducing diet—e.g., 1100 calories a day—which will gradually bring down his weight. If he is a heavy salt-eater, then salt should also be restricted. In hypertensive heart-failure the diet should be modified as for all cases of congestive heart-failure—i.e., low sodium and restricted fluids. Particular care should be taken in hypertensive patients liable to indigestion; for hypertensives are in any case more prone to coronary disease than are normotensive people, and there is some evidence that disturbed gastric function may impair the coronary circulation. This will usually mean putting the patient on a bland diet. CHAPMAN and GIBBONS,[16] who have reviewed the whole field of diet in hypertension, are convinced that in some hypertensives the ALLEN or KEMPNER régime causes a significant fall in blood-pressure; but to most of us the evidence still does not seem firm enough to justify a doctor putting his hypertensive patients on a dull and monotonous diet which is also difficult to acquire and prepare.

Sex Hormones in Herbage

ABOUT 1941, sheep farmers in Western Australia became aware of a new threat to the health of their animals. The fertility of flocks grazing the pastures in this area rather suddenly began to decline to such an extent as to call for urgent scientific investigation. On some farms the reproductive difficulties soon became so acute that the owners gave up sheep-breeding altogether as unprofitable. The picture which emerged at the outset, as described by BENNETTS,[17] resolved itself into three seemingly distinct affections of the ewes. These were: (1) sterility in spite of repeated mating with rams of proved fertility, associated with cystic glandular hyperplasia of the endometrium; (2) dystocia due to fœtal death and consequent absence of parturition; and (3) uterine prolapse, usually occurring some months after the lambing season, and often seen in non-breeding ewes and even virgin females.

This emergency, of grave if localised economic importance, was tackled with commendable vigour and thoroughness, a team of workers being appointed by the C.S.I.R. and the department of agriculture of Western Australia to study the trouble from various aspects. Quite early on it seemed likely to be nutritional rather than infectious in origin and an interesting relationship soon became apparent. For some years efforts had been made to improve the Western Australian pastures by introducing an early variety of subterranean clover, *Trifolium subterraneum L.* var. *Dwalganup*. This plant found local conditions so much to its liking that in many pastures it became the dominant species. And it was on precisely these luxuriant pastures, which for a few deceptive years had seemed to be so outstanding a tribute to the skill of the agrostologist, that the breeding troubles occurred. A significant and profitable clue to the probable nature of the nutritional factor involved was provided by some other remarkable effects described by BENNETTS et al.[18] in sheep grazing on this clover. Though rams showed no clinical abnormalities and their breeding powers were unimpaired, wethers (castrated males) often exhibited unmistakable metaplastic changes in the accessory reproductive organs, of which the most striking was the prominence of a cystic gland lined by epithelium homologous with that of the vagina. This pointer towards sex-hormone imbalance was decisively reinforced by the most significant clue of all—the finding of abnormal teat and udder development not only in virgin females but also in wethers. In the females this was extensive enough to result in fairly copious lactation. Since it is now well known that udder growth and lactation can be induced in farm animals by treatment with œstrogens,[19] the team of investigators justifiably inferred that the affected sheep were ingesting a potent œstrogen from the pastures, or at least some substance which so modified their hormone balance as to establish an excess of œstrogen. On this view the whole complex of clinical syndromes fell neatly into place. It was not long before an œstrogenic extract was prepared from subterranean clover by CURNOW et al.[20] and the substance involved is now being investigated both in Australia and also by a member of the original team working with Prof. E. C. DODDS at the Courtauld Institute of Biochemistry in London.

These remarkable findings clearly open up a new field with wider applications than were at first apparent. For example, the fact that herbage may contain an œstrogenic substance in sufficient concentrations to evoke a response in the mammary glands of grazing animals suggested that the presence of œstrogens in English pastures might be connected with the flush of milk and improvement in its composition often observed when cows are turned out to spring grass. Indeed, workers at the National Institute for Research in Dairying and the Courtauld Institute of Biochemistry have jointly shown [21] that potent œstrogens can be extracted from English herbage. This coöperative investigation is now being pursued side by side with the study of the œstrogen of Western Australian clover, and it has already produced further evidence of significant amounts of œstrogenic material in English pasture plants.[22]

The idea that plants may contain animal sex hormones is not new; LOEWE and SPOHR [23] demonstrated œstrogens in plants as long ago as 1926 and they have

15. Levy, R. L., White, P. D., Stroud, W. D., Hillman, C. C. *Ibid*, 1946, **131**, 951.
16. Chapman, C. B., Gibbons, T. B. *Medicine*, 1950, **29**, 29.
17. Bennetts, H. W. *J. Dept. Agric. W. Austral.* 1944, **21**, 104.
18. Bennetts, H. W., Underwood, E. J., Shier, F. L. *Austral. vet. J.* 1948, **22**, 2.
19. Review by Malpress, F. H. *Brit. med. Bull*, 1947, **5**, 161.
20. Curnow, D. H., Robinson, T. J., Underwood, E. J. *Austral. J. exp. Biol. med. Sci.* 1948, **26**, 171.
21. Bartlett, S., Folley, S. J., Rowland, S. J., Curnow, D. H. Simpson, S. A. *Nature, Lond.* 1948, **162**, 845.
22. Legg, S. P., Curnow, D. H., Simpson, S. A. *Proc. Biochem. Soc.* Jan. 21,
23. Loewe, S., Spohr, E. *Anz. Akad. Wiss. Wien.* 1926, **63**, 167.

since been identified in various species. What is new and important is the finding that, exceptionally, pasture plants can contain enough to have pathological effects on grazing animals. This poses the question as to the part played by pasture sex hormones ingested regularly by herbivores in subtoxic amounts, in the regulation, not only of fertility but of growth, fattening, and lactation, all of which are under endocrine control. These aspects merit serious study in relation to modern techniques of pasture improvement, particularly since the successful efforts to improve the pastures in Western Australia had such unexpected and undesirable consequences. So we may hope to apply the knowledge gained from this strange happening to the benefit of mankind. This work would clearly come within the scope of the concerted international effort in the field of steroid science that Sir ROBERT ROBINSON called for in his anniversary address to the Royal Society.[24]

Annotations

DEATH ON THE BEDPAN

STRAINING at stool may be a fatal activity for the elderly, the hypertensive, and those with defective hearts. A group of American workers [25] have looked up the records of all patients in Cincinnati General Hospital who died on bedpans and came to necropsy between 1936 and 1946; and they have also studied the effects of "bearing down" on the blood-pressure and electrocardiograms of normal people and patients with heart-disease. There were 11 bedpan deaths recorded among notes on 6700 necropsies; and no doubt there were more of them than this at the hospital during the ten years under review, for not all cases ending fatally were examined post mortem. All the patients except one (a child of six with rheumatic carditis) were over forty, and 5 of them were over sixty; most of them had serious organic heart-disease. The accidents which overtook them were such things as rupture of a dissecting aneurysm, cerebral or subarachnoid hæmorrhage, myocardial infarction, pulmonary embolism, or other accidents associated with a damaged heart or vessels.

Those normal subjects and patients who provided material for the practical study were asked to take a deep breath, hold it, and strain down vigorously as if trying to have a bowel movement. Electrocardiograms taken before, during, and after the strain were correlated with blood-pressure readings from the radial artery, and with records of intrapleural pressures measured by water manometers on patients with a pneumothorax. The systolic blood-pressure fell slightly as the deep breath was taken; but as the straining began systolic and diastolic pressures rose abruptly—from 147/80 to 203/142 mm. Hg (average in 10 subjects). While the strain lasted, both pressures slowly fell, but since the systolic fell more than the diastolic, the pulse-pressure was much reduced by the end of the period of strain—sometimes almost disappearing altogether. At the moment when the strain ended the blood-pressure fell still further—to an average of 84/58. Within 5 seconds, however, the "after-fling" came into play, the pressure rising quickly again to well above the normal level. Normal blood-pressure was only regained some 30 sec. later. Pressure curves made from the left ventricle and the femoral artery, of a patient with a defect of the ventricular septum, showed that the blood-pressure changes matched those in the left ventricle; similar types of pressure curve were obtained from the right ventricle, right auricle, superior and inferior vena cava, and also the rectum and bladder. Intrathoracic pressure fell slightly as the breath was taken, rose abruptly by some 20 mm. Hg as the strain began, and maintained a plateau at that level until the strain ended, when it fell at once to normal (average in 10 patients with a pneumothorax).

The dangerous moment came with the after-fling; for during the first rise of blood-pressure, at the onset of strain, the great vessels were supported on the outside by the rise of intrathoracic pressure. During the after-fling the intrathoracic pressure had already fallen to normal, and thus there was nothing to buffer the vessel walls against the strain. The authors suggest that the fall in pulse-pressure towards the end of bearing down may favour intravascular clotting and also sharply reduce the flow in the coronary arteries. Moreover sudden changes in intravascular pressure may dislodge thrombi not firmly attached to the walls of vessels. The electrocardiogram showed that the heart-rate increased slightly during the intake of breath, slowed, and then increased again during the bearing-down period; at the moment of relaxation bradycardia developed in normal people, and in some ectopic rhythms appeared as well. Bradycardia also developed in patients with rheumatic heart-disease, but was less common in hypertensive or arteriosclerotic patients. The changes in rate and rhythm were abolished in normal subjects by atropine gr. $^1/_{75}$ given intravenously. Since the study shows that cardiac arrhythmias, vascular hæmorrhages, and pulmonary embolism are the common causes of death on the bedpan, the authors comment that the avoidance of constipation, early ambulation after operations (to reduce the chance of venous thrombosis), and atropine may be the means of reducing such deaths. It looks as though the best friend of the elderly patient with morbus cordis is a gentle laxative.

ACTION OF EMETINE

FOR forty years emetine has been looked on as a specific for amœbiasis. That it will not reach the amœba in every tissue in which this parasite is lodged has, of course, been recognised at least since the 1914–18 war, though this limitation was rediscovered many times during and after the recent war by physicians new to tropical experience. However, in an organ such as the liver, where emetine reaches a relatively high concentration and comes into very close contact with the amœba, its action is more certain. Even when an abscess has already developed, emetine will stop the active processes in the surrounding liver tissues, symptoms will rapidly subside, and the abscess itself, already sterile, will usually dry up; but in amœbic hepatitis where the amœba is fighting an evenly matched battle with the liver tissues, the effect is more dramatic. Here even a single injection of one grain of the alkaloid will often tip the balance in favour of the tissues and cause a sharp clinical improvement. A course of three injections is regarded by many workers as a very useful therapeutic test.

The frequency with which a hepatitis in tropical countries responds in this way to emetine has been explained in two ways: some workers claim that it indicates the frequency with which the liver is involved in amœbiasis; others hold that emetine has a specific action on the liver whatever micro-organism is infecting it. From time to time the latter school of thought recruits a fervent disciple, such as Professor Melchior, of Ankara University, who has now gone even further in his enthusiasm for emetine and has used it in infections of other organs and tissues—e.g., malignant furuncle of the lip,[1] purulent traumatic meningitis,[2] abscesses of

24. *Nature, Lond.* 1949, **164**, 1023.
25. McGuire, J., Green, R. S., Hauenstein, V., Courter, S., Branenstein, J. R., Plessinger, V., Iglauer, A., and Noertker, J. *Amer. Practit. Digest Treat.* 1950, **1**, 23.

1. Melchior, E. *Surgery*, 1948, **24**, 724.
2. Melchior, E. *Arch. ital. Chir.* 1948, **70**, 110.

joints, puerperal peritonitis, septicæmia, cholecystitis and cholangitis,[3] and appendicitis. He has gained the support of Prof. Corinaldesi, of Bologna, who has used emetine with success in a large series of surgical and gynæcological infections, many of a grave nature.[4] Dr. Bernoulli [5] demonstrated that, in vitro, emetine had little lethal action on streptococci, staphylococci, pneumococci, and coliform organisms, but that it had a pronounced bacteriostatic action. Others have noted striking dramatic effects of emetine in acute appendicitis, but in many such cases the amœba has been found to be the cause. In circumstances where it is at all possible to delay operation, some surgeons in the tropics prefer to give emetine first in cases of acute appendicitis, since the results of operation on the amœba-infected appendix are sometimes very unsatisfactory, whereas emetine treatment often obviates operation.

If Professor Melchior is right and emetine is curative in non-amœbic liver infections, we can no longer assume that response to emetine means that a hepatitis is necessarily of amœbic origin; and one of our few diagnostic criteria for this condition will no longer be valid. On the other hand it is now a good many years since he made his first observations on the non-specific action of emetine in 1943, and it is a little surprising that so few others have observed the protean effect of a drug which was used so extensively throughout the war years.

HOME HELPS FOR THE TUBERCULOUS

IN our correspondence columns Miss E. D. Andrews describes the difficulty a tuberculous patient—even when non-infectious—may experience in getting help in the home during illness. Such patients have more difficulty than most in gaining admission to hospital; and at home, she suggests, they are unable to get even the small amount of help available to other sick people.

General provision for the tuberculous is inadequate, as we recently pointed out [6]; and it seems that here is another way in which they may be penalised. All the same, the position of the health authorities is not easy, and the difficulty certainly does not arise from lack of good will. She writes from London; and the London County Council have taken much advice on the very point she raises. Would it be justifiable to send home helps into the households of tuberculous patients without giving them some warning and choice? The L.C.C. thought not, and therefore decided that they would send only volunteers to such households; they decided, too, that if possible such helps should be over the age of 45; that if possible they should not work in tuberculous households for more than 3 months at a time; that their chests should be radiographed at the discretion of the divisional medical officers; and that each should receive a short note on precautionary measures.

A further suggestion that the chest of every home help should be periodically radiographed has met with the objection that this practice would prove alarming and dry up the source of voluntary labour. Yet we are not at all certain that this fear is well founded: people are far more commonly reassured than alarmed by precautions for their protection, as we all learned in the war. In 1934, when Geer,[7] in St. Paul, U.S.A., instituted his precautions for the protection of nurses against tuberculosis, everyone predicted a decline in recruitment; but in fact from the time they were started the hospital never lacked staff. Clearly, though the L.C.C. have taken sensible steps to protect their home helps properly, the problem is not yet solved; and it is a problem of growing importance. If the domiciliary care of the tuberculous is to be considerably increased, as we believe it should, it looks as though we should have to develop, somehow or other, a volunteer home-help service specially for them. Much might be done perhaps by making a clearer distinction between the open and the closed case. Once people learn that the closed case is not infective they will be far less likely to hang back; and this change of attitude would be of help to tuberculous patients everywhere.

3. Melchior, E. *Helv. chir. Acta*, 1948, **15**, 75.
4. Corinaldesi, F. *Bull. Sci. med., Bologna*, 1948, fax. 2.
5. Bernoulli, L. *Z. Path. Bakt*, 1944, **7**, 525; 1945, **8**, 96.
6. *Lancet*, 1949, **ii**, 1225.
7. Geer, E. K. *Amer. Rev. Tuberc.* 1934, **29**, 88.

MORPHOLOGY AND VIRULENCE

BACTERIOLOGISTS have long been aware that the morphology of organisms and their colonies may be related to virulence. Smooth and rough colony variations often connote virulent and non-virulent phases, and the loss of pneumococcal capsule brings both roughness and loss of virulence in its train.

The pattern of growth of *Myco. tuberculosis* has often been studied, and it is well established that on solid or in liquid media virulent strains and also some B.C.G. strains form tight bundles or cords of organisms lying parallel to each other; avirulent strains, on the other hand, merely grow in irregular clumps. The colonial forms which any single strain of tubercle bacillus may take on different media are notoriously variable, but Dubos [1] made it clear that in a large number of strains cord formation and virulence were closely associated and that the tighter the cord the greater the virulence. Cord formation can be enhanced by chick-embryo extract or diminished by adding certain surface-acting agents. Such a characteristic mode of growth of virulent tubercle bacilli could presumably depend either on chemical or physical forces, or on both. A chemical substance present in virulent but not in avirulent strains could bind the bacilli in parallel; and Dubos and Middlebrook [2] demonstrated by a colour reaction that such a cord substance exists. Bloch [3] has now shown that the bacillary cords can readily be disrupted when virulent strains are suspended in hydrocarbons, such as paraffin oil or petroleum ether. So long as the bacilli are surrounded by a watery layer they are protected from disruption, but in a lipophylic phase the binding substance readily goes into solution leaving the bacilli dispersed as single organisms or small clumps. Bloch has thus been able to isolate in crude form the binding or cord substance and to study some of its properties. There seems little doubt that it differs from the numerous other fractions which have been isolated from tubercle bacilli, and that it is not concerned in sensitivity to tuberculin. Avirulent organisms do not possess the cord substance; and virulent organisms, from which it has been stripped, are still able to grow on culture media. Bloch [4] also shows that the possession of the substance prevents virulent strains from reducing methylene-blue, while in avirulent or stripped organisms the permeability of the bacterial surface permits the cell's enzyme to make contact with its substrate.

While there is good reason to believe that the lipid substance and virulence are associated properties it is much harder to show what part cord factor plays in the disease itself. Organisms already tightly packed together may be better able to withstand attack, and we do know that dispersed organisms in a test-tube are more readily killed than those in solid phalanx. The American workers, however, had already shown that when leucocytes phagocytose virulent tubercle bacilli the white cell loses much of its power to migrate on plasma gel while avirulent organisms migrate freely. Cord factor itself has been shown to have both a leucotoxic and a

1. Dubos, R. J. *Bact. Rev.* 1948, **12**, 173.
2. Dubos, R. J., Middlebrook G. *J. exp. Med.* 1948, **88**, 81.
3. Bloch, H. *Ibid*, 1950, **91**, 197.
4. Bloch, H. *Amer. Rev. Tuberc.* 1950, **61**, 270.

leucotactic effect. In addition, while a single dose of cord factor causes no ill effect, repeated small injections in mice lead to death after the ninth day. Severe hæmorrhages were seen in the lungs of these animals and the agent appeared to damage the capillaries, though the mode of action was not clear. The fact that at least two injections are needed to cause tissue damage suggests the possibility of some type of sensitisation. The American workers have not been able to show that virulent tubercle bacilli stripped of their lipid coat, fall an easy prey to the body's defences in the same way as naked pneumococci. Stripped tubercle bacilli still produce infection, though its progress is slow. Clearly it is not possible to equate virulence with cord substance, but there can be little doubt that it is an indispensable covering for the fully virulent tubercle bacillus.

FORESIGHT IN THE U.S.A.

THROUGH the smoke of the battle over medical services in the United States one can discern agreement at least on certain fundamentals. For example, everybody wants to see more hospitals provided, particularly in rural areas, and everybody would like coördination of hospital and health-services areas. Also everybody agrees on the need to have all relevant facts; and to this end a number of valuable and non-controversial reports have been produced. The latest of these [1] gives estimates of the number of doctors that will be required in the future. Prepared by Dr. Joseph Mountin, assistant surgeon-general to the United States Public Health Service, and Elliott Pennell and Anne Berger, statisticians, it follows an earlier work entitled "Health Service Areas: Requirements for General Hospitals and Health Centres."

The central purposes of the report are "to describe the existing distribution picture for physicians against . . . a pattern of medical service areas, to present estimates of the number of physicians that might be utilised as health services are extended more uniformly throughout the Nation, and to forecast possible physician resources." The authors begin by tracing the expansion in the number of doctors practising in the United States since the turn of the century. From a total of 134,000 in 1909 this has grown to an estimated total of 200,000 in 1949. Even so, however, the increase has not kept pace with the growth of the general population. Thus in 1909 there were 149 doctors per 100,000 persons and in 1949 only 137. Side by side with this growth has been the increasing trend towards specialisation: in 1923 some 15,000 doctors limited their practice to a specialty, but last year the estimated figure was 50,000. During this time the inequalities of distribution of doctors have become more pronounced and the New England and Middle Atlantic States have now beaten the claim of the Pacific States to the highest doctor-patient ratio, with 174 per 100,000. On the other hand, the South Central States have declined to 99 per 100,000. The report emphasises that doctors are attracted to areas with relatively high per-capita incomes, and within these areas to centres of population generously supplied with hospital facilities. Such facilities, even apart from per-capita income, serve to attract and retain physicians.

The principle is accepted without question that hospital or related facilities should be accessible to every doctor, and that even in rural areas they should consist of a small hospital or health centre. It is also regarded as axiomatic that doctors in all locations should have access, directly or indirectly, to the physical facilities of a complete hospital system. On this understanding an attempt is made to estimate the number of doctors required by 1960. In 1940 a quarter of the inhabitants of the United States lived in regions which had 146 or more doctors per 100,000; a third lived in regions with a doctor-patient ratio below 146 but above 136; and the remainder lived in areas with a ratio below 136 but above 118. The estimated requirement for 1960, based on raising regional ratios to 146 if below that level and keeping them constant if above it, is 241,172. The corresponding requirements for levels of 136 and 118 are 229,785 and 213,523 respectively. This excludes doctors employed by the Federal government, the Veterans Administration, the public-health services, and the defence services. (If the needs of the various Federal agencies are included and allowances made for retirement the totals for 1960 become 272,172, 260,785, and 244,532 respectively.) On present output the medical schools will barely be able to maintain an over-all ratio of 136, and "even if another decade were allowed to take care of expected deficits, present medical training facilities would still have to be expanded considerably." On the other hand, it is expected that of the doctors available in 1960 no fewer than 70,640 will have been trained as specialists, compared with the highest estimated requirement of 58,540. The only type of specialist who may be scarce is the tuberculosis expert.

As a step towards discovering the deficiencies which have to be made good in providing adequate medical services this report is valuable. It can be criticised on the grounds that it does not deal in detail with under-doctored districts; but it is refreshingly modest, and the authors content themselves with their estimated figures. By implication they make it clear that the difficulty of getting doctors to settle in under-doctored areas can be largely met by providing better hospital facilities and by the integration of hospital and health services. On this score alone the report should do good, in helping to prevent in the U.S.A. the rift between hospital and health services now so painfully evident in this country. It demonstrates also the value of thinking ahead: for the estimates will enable existing medical schools to plan precisely for the next ten years and will assist the authorities to decide what extensions and new schools are required. Political and administrative action will thus be based on fact rather than expediency.

1. Public Health Bulletin No. 305. Health Service Areas: Estimates of Future Physician Requirements. Federal Security Agency, Public Health Service, Washington, D.C.

COMPOSITION OF MATCH HEADS

IT appears that the children of Victoria, Australia, are addicted to eating the heads off matches, especially the coloured ones. A firm of match manufacturers (Bryant and May Ltd.) has been receiving so many telephone calls from doctors about the composition of match heads, that the managing director has sent to the Victorian branch of the British Medical Association a letter giving the information and asking that it be published.[1] The main chemical in the heads of safety matches is, he says, potassium chlorate (60 match heads containing about half a gramme), and there are smaller amounts of glue, sulphur, and what are claimed to be "inert" filling materials like powdered silica and asbestine. In the coloured matches is a small amount of an aniline dye, of the type used in foodstuffs. No phosphorus is used in the safety matches. The heads of wax matches contain the same ingredients as those in safety matches, with the addition of a "non-poisonous compound of phosphorus and sulphur," presumably phosphorus sesquisulphide. It is pointed out that white phosphorus has not been used for over 50 years in these "strike anywhere" compositions.

The striking surface of the match-boxes contains red or amorphous phosphorus, which is said by the manufacturers to be non-poisonous and to pass unchanged

1. *Med. J. Aust.* Dec. 31, 1949, p. 958.

through the alimentary tract. Schwarz et al.,[2] who give a more complete account of the chemicals used in match manufacture, say that bone necrosis does occur from the use of red phosphorus, though few cases have been reported. The sesquisulphide is less toxic, but not completely harmless. The banning by the Berne Convention (1906) of the use of white phosphorus in the manufacture of matches is rightly regarded as a notable advance in preventive medicine. And the neo-Victorian children, who like the "taste of pink," will come to less harm than their Victorian forebears would have done if they had committed similar dietary indiscretions.

CHEMOTHERAPEUTIC LESSONS FROM BOVINE MASTITIS

OVER 70 years ago Dr. Milroy in his "suggestions" for lectures at the Royal College of Physicians emphasised the valuable information likely to accrue from studies on comparable diseases in man and animals; but only in recent times have the natural infections of animals, as opposed to those experimentally induced, received detailed attention. Some of these natural infections may be transmitted to man, and uncontrolled diseases in domestic animals sometimes have a serious effect on the national economy. An obvious example of the latter is bovine mastitis. Although mastitis occurs as a human infection, it is fortunately not so common as the disease in cattle, though the basic pathology is similar. Bovine mastitis occurs in both acute and chronic forms. The acute disease when not fatal commonly causes disorganisation or destruction of the affected quarters, while the chronic form has a serious effect on the cow's general well-being and milk yield. Several well-recognised pathogens may cause the infection, the commonest being *Streptococcus agalactiæ*, which can be recovered from acute or chronic cases. Other streptococci, including strains found in human disease, may be found, particularly in acute infections. *Staphylococcus aureus* causes about 20% of all the cases of mastitis, among which are the most serious. These staphylococci are morphologically similar to many seen in human infections.

The clinical efficacy of the sulphonamides in streptococcal mastitis is irregular; but penicillin injected up the teat canal, alone or combined with sulphanilamide by mouth, has proved strikingly successful. *Streptococcus agalactiæ* infection has been eradicated from many herds in this way. Systemic penicillin does not provide a sufficient concentration in the udder to deal adequately with the local infection. As in the human disease, staphylococcal infections have often proved difficult to treat satisfactorily, even when the organism is sensitive to penicillin in vitro. The result in dairy herds has been an increasing number of subacute or chronic cases producing contaminated milk. As Thrower[3] has pointed out, pasteurisation alone provides an undesirable safeguard against risks of this kind; it may delay the proper clearing-up of herds, and also retard improvements in milking technique and teat hygiene which will reduce the incidence of cross-infection.

Other compounds which may be useful in the resistant cases are being tried, and the findings are instructive from the point of view of chemotherapy in general. Dibromopropamidine ('M. & B. 1270') has been shown to be bactericidal in high dilutions for staphylococci and streptococci,[4] including those recovered from cases of bovine mastitis. When, however, it was tested against these in the presence of milk, the concentration necessary for bacteriostasis was found to be five hundred times that required in a milk-free medium. Analysis demonstrated that the inhibitory factor was lecithin.[5] This inhibitory effect of lecithin has been observed independently by Elson.[6] Together dibromopropamidine and sulphathiazole, in the correct proportions, seem to have a synergistic effect. After repeated experiments it was found that a mixture of dibromopropamidine and sulphathiazole in the proportions of 4:1 was four times as active in a milk medium as dibromopropamidine alone. A trial of the combination of the two in arachis oil and beeswax injected into the udder gave clinical results in keeping with the experimental findings and quite as good as those with penicillin given locally.

The tendency of natural fluids to interfere with the bactericidal powers of antibacterial substances has been troublesome since the early days of chemotherapy, but apparently not much attention has been paid to the individual factors responsible. This work on dibromopropamidine is a step in the right direction. There are, incidentally, good reasons for avoiding the use of penicillin in the udder. The milk from a cow treated for mastitis may contain enough penicillin to interfere with the action of the streptococci used as "starters" in cheese-making, and it will give an optimistically fallacious answer to the methylene-blue test for keeping quality.[7] Few changes have brought as much benefit to mankind in recent years as the reductions in the price of penicillin; perhaps there is good reason for not making it any cheaper.

ROYAL VISIT TO THE SURGEONS

ON March 20 the Queen visited the Royal College of Surgeons to be admitted to the honorary fellowship. In welcoming her, Sir Cecil Wakeley described the ceremony as the first and foremost event in the celebration of the 150th anniversary of the granting of the first royal charter to the college in 1800. With the Queen's name at the head of their honorary fellows, he continued, they would go forward with renewed vigour and firmer confidence in performing the duty laid upon them by George III—"the due promotion and encouragement of the Study and Practice of the Art and Science of Surgery." The Queen, who was sponsored by the vice-presidents of the college, Sir Harry Platt and Prof. E. F. Finch, said in her reply, that in the celebration of the college's anniversary there was a twofold emphasis—on the past and on the future—and she was glad to think that the future was as rich in promise as the past had been in achievement. She congratulated the college on its anniversary with confidence because the traditions on which its great reputation rested were stronger and more precious than ever and had become a part of our national life.

Sir NORMAN HAWORTH, D.SC., F.R.S., for many years professor of chemistry in the University of Birmingham, where he also held the office of vice-principal, died on March 18. In 1937 he shared the Nobel prize for his work on the chemistry of the carbohydrates and particularly his establishment, with E. L. Hirst, of the structural formula of vitamin C which later made its synthesis and large-scale production possible.

THE INDEX and title-page to Vol. II, 1949, which was completed with THE LANCET of Dec. 31, is now in preparation. A copy will be sent gratis to subscribers on receipt of a postcard addressed to the Manager of THE LANCET, 7, Adam Street, Adelphi, W.C.2. Subscribers who have not already indicated their desire to receive indexes regularly as published should do so now.

2. Schwarz, L., Tulipan, L., Peck, S. M. Occupational Diseases of the Skin. London, 1947; p. 840.
3. Thrower, W. R. *Brit. med. J.* 1949, 1, 502.
4. Wien, R., Harrison, J., Freeman, W. A. *Lancet*, 1948, 1, 711.
5. Carmichael, J., Maclay, M. D., Johnson, A. V., Johnson, L. *Vet. Rec.* 1950, 62, 55.
6. Elson, W. O. *J. biol. Chem.* 1944, 154, 717.
7. Hunter, G. J. E. *J. Dairy Res.* 1949, 16, 39, 152.

GENERAL PRACTICE IN ENGLAND TODAY

A RECONNAISSANCE

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GENERAL medical practice is a unique social phenomenon. The general practitioner enjoys more prestige and wields more power than any other citizen, unless it be the judge on his bench. In a world of ever-increasing management, the powers of even the senior managers are petty compared with the powers of the doctor to influence the physical, psychological, and economic destiny of other people.

But unlike the manager, who exercises his controls over whole groups of society, the doctor exercises his in a microcosm and in relation to individuals; and for this and other reasons he is largely free from the limitations which democratic principles set on the acquisition of power.

General practice is unique in other ways also. For example, it is accepted as being something specific, without anyone knowing what it really is. Neither the teacher responsible for instructing future general practitioners, nor the specialist who supposedly works in continuous association with the G.P., nor for that matter the G.P. himself, can give an adequate definition of general practice. Though generally identified with the last-century concept of "family doctoring," usually it has long ceased to be this. Nevertheless its stability and its reputation rest largely on this identification.

While other branches of medicine have progressed and developed, general practice, instead of developing concurrently, has adapted itself to the changing patterns; and sometimes this adaptation has in fact been regression.

There are no real standards for general practice. What the doctor does, and how he does it, depends almost wholly on his own conscience.

The conduct of general practice and of the individual practitioner is inextricably interwoven with commercial and emotional considerations, which too often negate the code of medical ethics by which the public are supposedly safeguarded and from which the high reputation of medicine stems. Hence material and moral issues have become inseparable, and it is impossible to discuss general practice without discussing morals, and therefore without moralising. In this report the issues are kept separate as far as possible, but this is not very far.

Section I describes how the observations were made; section II is an account of general practice as I found it; and section III deals with the National Health Service in relation to general practice as I found it. I contrast this with the usual endeavour made to interpret the Act in terms of what general practice is supposed to be or what we might like to think it is.

I know well that many of my deductions rest on subjective impressions rather than objective fact, though I have tried to keep the two apart. Very little statistical evidence is used—principally because little valuable evidence of this kind is available, and secondarily because the major problems of general practice are not soluble in terms of statistics.

My observations have led me to write what is indeed a condemnation of general practice in its present form; but they have also led me to recognise the importance of general practice and the dangers of continuing to pretend that it is something which it is not. Instead of continuing a policy of compensating for its deficiencies, we should admit them honestly and try to correct them at their source. If I do no more than convey this, I shall be satisfied.

I. SCOPE AND METHOD OF STUDY

At the outset I was advised that no accurate picture could be obtained by detailed inquiries in the London area, with its aggregation of teaching hospitals and many other complicating factors peculiar to a city of this size. I therefore decided to work outside London, in regions selected so that a mosaic might be constructed which would present the general picture. Having no knowledge of British geography or economy, I was guided by various advisers who knew the country, and eventually decided on three regions—in the north, the north-west, and the south. For purposes of comparison I also spent some time in Scotland.

Thanks to the willing coöperation of all the doctors approached, I have been able to see their work, both in their surgeries and in the homes of their patients, to become conversant with their difficulties, professional and personal, and to learn a great deal about their individual and collective attitudes to the new service.

Though others were visited, I have studied in some detail the work of 55 English practices, operated by 104 doctors. These 55 may be classified as:

Industrial	16
Urban-residential	17
Rural	22

The 16 industrial practices can be further divided into complete industrial 9 and "mixed" (industrial better-class residential) 7. The 22 rural practices can be divided into rural-town 8 and isolated rural 14. Some 30 of the practices were run by individual practitioners; the rest were partnerships or partner-assistantships with 2–6 doctors working together.

The 55 practices visited varied greatly in size (both number of patients and area) and in history and development.

Of the one-man practices some had full lists (4000) while others ranged down through 3000 and 2000 to less than 1000. Examples of different sizes were seen in all areas, though in the industrial areas only two practices were seen where the doctor's list was less than 2000, and in the rural areas only three where the lists approximated to or exceeded 3500. The partnerships and partner-assistantships studied covered much the same wide range of patient numbers, though very few had less than 2000 per partner.

In terms of area covered by a practice and accessibility of patients, conditions ranged from the most compact type of practice, in densely populated urban areas, to remote rural practices with less than 1000 patients living miles apart.

The history and development of the practices showed a similar wide range of variation. Some were over a century old; others had been established before the war but had since been entirely re-established. Many of the industrial practices had had large "panel" and "club" lists since the early days of the old National Health Insurance scheme, and had depended on these for the greater part of the income; but there were various gradations of the panel-private ratio through to completely private practice.

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Each practice was reviewed in respect of three factors which jointly seem to determine the nature, scope, and quality of medical care :

1. The doctor.
2. The doctor's working environment :
   (*a*) Surgery.
   (*b*) Equipment.
   (*c*) Patient load.
   (*d*) Ancillary facilities.
3. The general social environment.

Of these, nos. 2 and 3 lend themselves to objective evaluation. No. 1, the doctor, is much more intangible ; but being undoubtedly the most important single unit in the whole field of medical care, he must be discussed with whatever objectivity is possible.

METHOD OF STUDY

My observations were made by " sitting in on " each practice—a term which requires careful explanation because the validity of these observations, and of some of the conclusions reached, depends on the technique adopted.

In retrospect, " sitting in on " a practice connotes to me a very wide range of behaviour ; everything, in fact, from sitting quietly in a corner trying to efface myself, while the doctor in an embarrassed and artificial way attempted to conduct his consultations, to a nearly complete identification with the doctor's work and behaviour. In the latter cases I found I was able to join in examinations, to interrogate patients, and to discuss points at issue without embarrassment to any of the parties concerned. Fortunately, as a rule the situation approximated, at least after a time, to the last-mentioned happy state of affairs. In the few cases where it did not, I have endeavoured to make allowances or write off the evidence obtained.

Similarly the domiciliary work I did with the doctors ranged from sitting in the car outside the patient's residence and discussing the case with the doctor, or being entertained by the relatives in the front parlour while he had his consultation in the bedroom upstairs, to complete and uninhibited participation in the consultation and examination. Here again the last-mentioned circumstances usually prevailed, and full allowances have been made where they did not.

The time spent " sitting in on " the work of a practice varied from one to four or five days. It depended sometimes on advance arrangements made through a third party, but more often on a personal estimate of the value of the practice as a source of relevant information.

SELECTION OF PRACTICES

The selection of practices and practitioners to be seen was as much beyond my control as the selection of geographical areas in which to work. It was obviously not feasible to take a completely random sample, and precautions had to be taken against the selection of a whole group of " good men." Different people did the selecting in different areas. In most areas a number of people helped to make the selection ; they were asked to select some " good," some " fair," and some " bad " practices. Those usually consulted were regional medical officers who had experience of " refereeing " in the area ; consultants who knew, sometimes personally, always by repute, the practitioners in the area ; local-authority medical officers ; and in some parts of Scotland the chairman and secretary of the local medical committees. Sometimes it was possible to choose the common factors from the lists suggested by two or three people ; sometimes the choice depended partly on which practitioners were available.

The selection among the rural practitioners in the southern region was much more random. It was made by one person, who knew most of those selected by name only. They were chosen largely on geographical situation and not on reputation. In north-west Scotland particular areas were selected and all the practitioners in them were visited.

Occasionally I was passed on from one practitioner to another ; but generally I tried to avoid this. Once I asked to see the work of a particular " group " practice. Always I was introduced to the practice concerned by a disinterested third party who was kind enough to undertake this task.

I am well satisfied that, by this diverse means of sampling, a fair and representative sample of general practice under the various environmental conditions was obtained.

In the northern and north-western regions, before any approach was made to the question of general practice, I sought information from people working for regional hospital boards, executive councils, and local authorities. In the southern region, as a rough control to any bias which might result from this sequence of activity, the general practitioners were visited before I consulted the authorities.

HOSPITALS AND GENERAL PRACTICE

Originally it was proposed that, after reviewing the work of a number of practices in a given area, observations should be made in the outpatient department of the hospitals fed by these practices. It was never intended to follow up particular cases, but to see whether the outpatient work would provide some sort of index of what was happening in a particular type of practice. It was also hoped that some statistical data might be obtained—e.g., the volume and nature of outpatient work before and after July 5, 1948—which would throw light on trends in general practice since the introduction of the service.

In some places it proved possible to do such a " follow through " ; in others, either because the practices fed too many hospitals or because the hospitals were too far away, I could not make any real correlation between the work of the practices and of the outpatient department. However, in every instance I visited some hospitals in or beside the area of study and considered what was happening in the outpatient department.

THE ACT AND THE PROBLEM

When the study began, the National Health Service had been in operation less than six months, and I recognised that it was very early to start assessing its effects on general practice. I also recognised that many of the initial difficulties, often described as " teething troubles," could obscure or complicate the picture. I have therefore tried to separate the " teething " problems from the more formidable long-term problems, and at this early stage I have concerned myself with general trends in the pattern of medical care rather than with the difficulties facing individual practitioners.

It soon became obvious that many problems which had existed for years, and were inherent in general practice as we know it, were being interpreted as results of the new National Health Service. This was very serious because it was preventing clear thought on important issues. Accordingly I decided to attempt first an assessment of general practice at this point of time, out of relation to the new Act, and secondly an interpretation of the actual and possible effects of the Act upon it.

Straight away, some very elementary questions presented. What constitutes general practice today ? What does the general practitioner do ? How does he do it ? What criteria have we for judging the quality of general practice ? How does general practice integrate with other medical services—hospital, specialist, and preventive ? To these and other apparently simple yet fundamental questions there are no simple ready-made answers. To some there are just no answers.

I shall begin, then, with a general account of what was seen in the practices studied.

II. THE STATE OF GENERAL PRACTICE

THREE MAIN PATTERNS

General practice is not, as generally assumed, something specific and definable. There are different patterns of practice, and I must distinguish these before describing specific examples.

From the first, I suspected that there were big differences not only in the quality of practice in different areas but also in its nature; but I did not imagine that the differences would be so great or so basic as they proved to be. I thought, rather naïvely, that it was an easy matter to select "good," "average," and "bad" practitioners, and to identify the "good" doctor with good practice or the "bad" doctor with bad practice. I supposed that the "good" doctor would practise well in spite of the social environment in which he worked; but this assumption likewise proved to be false.

The three main patterns of general practice are set by the social environment. They are:

1. General practice in urban industrial areas. (Henceforth called industrial practice.)
2. General practice in better-class urban residential areas. (Henceforth called urban-residential practice.)
3. General practice in rural areas. (Henceforth called rural practice.)

Industrial Practice

Industrial practice has departed a very long way from the ideal of family doctoring. The facilities for medical work are almost always unsatisfactory.

SURGERIES

Consider first the surgeries—the buildings which serve as the doctors' workshops. These are usually located in what was once a shop, or a residence above a shop, or in the downstairs rooms of a house tenanted by some person who takes care of the surgery or occasionally by the doctor himself.

The adaptation of shop or house to doctor's surgery is usually very elementary. As a rule two adjacent rooms serve as waiting and consulting rooms, and where dispensing is undertaken a third room may be set aside for this purpose. That is the basic plan, and there is very little variation from it. Where two or more doctors are working together, there may be two or even three consulting-rooms adjacent to a common waiting-room. The size and plan of the original premises largely determine any other differences between surgeries in industrial areas. I did not see a single industrial surgery which was built for its purpose.

In most cases the waiting-rooms are too small, cold, and generally inhospitable. In peak hours in big practices it is usual to see patients standing, waiting their turn to consult the doctor, and it is not uncommon to see them standing in the garden, where there is one, or queueing in the street where there is not. The comfort of patients and the needs of the sick have certainly not determined the nature of the industrial-practice type of waiting-room.

Consulting-rooms vary greatly in size and furnishings, but are generally comparable from a functional standpoint. Everything is done in this one all-purpose room. The patient is interrogated and the history taken; if he is to be examined he removes such clothing as is necessary (or is convenient) and either hangs it on a hook or piles it on the chair on which he was previously sitting (very rarely a screen is provided, behind which he can change in relative comfort with minimum embarrassment, and very very rarely there may be a changing-room, though I have not myself seen one in an industrial practice); and then the examination is made, sometimes including the collection of a specimen of urine, which is tested at a sink in the same room. It is indeed an all-purpose room.

Quite often the consulting-room is far from soundproof and the most intimate details of a consultation can be distinctly heard in the waiting-room beside it.

The equipment contained in these consulting-rooms also varies considerably. In the sample of practices studied, the range was from satisfactory to dangerously poor—with too many approaching this last category. If we set the basic "heavy" equipment at desk, chairs, examining couch, filing cabinet, instrument cupboard, steriliser, and wash-basin with hot and cold water, and take this as a minimum level of essential heavy equipment for satisfactory practice, we immediately have to classify many industrial practices as unsatisfactory. In several of the surgeries I visited there were no examining couches; in many there were no filing cabinets, and such records as were kept lay around the room either loose or in boxes; in one there was a chair for the doctor only (the patient remained standing throughout consultation and examination); in some a saucepan on a gas-ring served as steriliser; frequently I observed that instruments were kept in odd drawers, or on a table, window-ledge, or mantelpiece, exposed to the atmosphere; and sometimes the doctor had to walk to another part of the premises to wash his hands.

I noted a similar range in the instruments of diagnosis and therapy with which these surgeries were provided. Always obvious were stethoscope, thermometer, tongue-depressor (sometimes of the old bone type, standing in a jar of "antiseptic"), sphygmomanometer, watch, syringes, and needles. Apart from these indispensable articles of practice, there was usually an ophthalmoscope, an auriscope set, and a variety of instruments of varying vintage and type. Proctoscope and vaginal specula were usually in evidence, although frequently there was also abundant evidence of their long disuse. Besides these, a variety of other instruments, antique or sometimes relatively modern, were often to be seen lying around as mementos of past interest in various aspects of medical work.

I have laboured these points of detail somewhat, because it is necessary to recognise the unsatisfactory nature of the doctor's workshop in an average industrial practice; for this factor in itself sets a limit to the scope and quality of his work, to the treatment his patients receive, and to improvement of the situation. Few skilled craftsmen, be they plumbers, butchers, or motor mechanics, would be prepared to work under conditions or with equipment as bad (comparably) as that tolerated by many doctors working in industrial practices.

But even more important than these material conditions is what goes on inside the surgeries and what use is made of the resources they possess.

EXAMINING THE PATIENT

The frequency with which the examining couch is used is a good index of the nature of medical practice under these conditions. I noticed on some occasions that a perfectly serviceable couch was piled with boxes and bottles; the adherence of these articles to the leather cover showed that they had occupied this position for some time. Often I have sat on a doctor's examining couch throughout a consulting hour; and, though many patients gave histories and presented symptoms which indicated the need for thorough examination, they left without any attempt being made to examine them or any arrangements being made for a future examination.

I particularly noted cases where, in my opinion, the history suggested an urgent need for rectal or vaginal examination; and I had listed over forty such cases

before I saw a general practitioner pull on a rubber glove and make the examination, or arrange with the patient to do so at a later date. A small proportion of these people were referred to hospital outpatient departments, on the strength of their history alone; but the majority received reassurance and local symptomatic treatment.

In fact, under the prevailing conditions of industrial practice, anything approaching a general or complete examination is out of the question; "examinations" are usually confined to the offending organ and even then are cursory. Certain routine procedures are followed, sometimes almost religiously: throats and tongues are looked at, pulse-rates and temperatures are taken, blood-pressures are recorded on indication, and chests are "listened to," either at the patient's request or for some specific reason. (The process of "listening to" must not be confused with a chest examination: it consists merely in applying the stethoscope to some area readily exposed by unbuttoning a shirt or pulling down an undergarment.) On urgent indication an abdomen may be palpated: I have often seen this done with the patient standing, and I have rarely seen what could be termed a thorough abdominal examination made in an industrial practice.

Once or twice I have seen a doctor, working under these conditions, take a blood sample to send to the laboratory for examination; but as a rule, when such an investigation is thought necessary, the patient is sent in person to the hospital, without consideration for his convenience or sensitivity.

EFFECTS OF ENVIRONMENT

One could go on listing the shortcomings of general practice in industrial areas; but it is neither my purpose nor my desire to defame the overworked and often conscientious doctor who has to suffer the indignities of this way of working.

Where these shortcomings are admitted, people are apt to attribute most of them to the volume of work which the industrial practitioner has to handle. This provides a convenient rationalisation of an otherwise embarrassing situation.

There is no doubt that the volume of work *is* too great, but this is merely a secondary factor. If the doctors' surgeries were better from a functional point of view; if they were equipped at least to some minimum standard; if a little order were brought into the chaos which characterises the organisation of the average practice (e.g., by employing clerical assistants); and if the work of the industrial practitioner were coördinated with that of other medical agencies—then the same volume of work could be handled at a much higher level and with due regard to the safety and comfort of the patient. (As I shall show later, the average industrial practitioner, though he works in close proximity to the great urban medical centres, is more isolated from the benefits these could bestow on him than is his colleague working out in the countryside.)

I found that the working environment of general practitioners in industrial areas was so limiting that their individual capacity as doctors counted for very little. In the circumstances prevailing, the most essential qualification for the industrial G.P., from the standpoint of public safety, is ability as a snap diagnostician—an ability to reach an accurate diagnosis on a minimum of evidence, objective or subjective. The skill attained in this type of diagnosis is sometimes really remarkable, but it very seldom bears any relation to our accepted ideas of "quality" as assessed by academic qualifications or conventional clinical experience. Some of the doctors with least to show in qualifications or hospital experience proved to be the best snap diagnosticians, and therefore the best and safest industrial practitioners, whom I met.

These facts have obviously affected the type of doctor who has entered the jungle of medical practice in industrial areas. Broadly speaking, I came across two types, which one might call the mercenaries and the missionaries. Among the latter are men of outstanding character, sincerity, and occasionally medical ability as displayed by qualifications and experience, who have gone into the industrial areas to "do good." Among the former are some who, by our accepted standards, are judged undesirables.

I saw and worked with some of both of these types and formed the opinion that their environment levels them to a degree where, in effectiveness, there is little to choose between them. In fact, the "mercenary" who is a good snap diagnostician may be of greater value than the "missionary" who cannot match him in this. Under the conditions of industrial practice the "good" doctor has little or no opportunity to exercise his humanistic, psychological, or educational function, which we accept as an essential and integral part of general practice.

Thus in industrial areas medical practice has moved far from the last-century concept of family doctoring; it has not progressed in terms of modern scientific knowledge; and it has reached a point where, despite the efforts of the most conscientious individual doctors, it is at the best a very unsatisfactory medical service and at the worst a positive source of public danger. This is no sudden or recent happening, but is the result of long neglect of the important medical and ethical principles to which we so readily pay lip service.

In 1924 Abraham Flexner[1] wrote:

> "Less than half a century ago the office of an able urban practitioner consisted of two rooms, one for waiting and the other for consultation. There was little to indicate which was which beyond the ancient tilting haircloth examining chair, the wash basin, . . . a few simple instruments which, used for all sorts of purposes, were never boiled, two or three vials containing mercury or carbolic acid for local applications, and the mantelpiece strewn with proprietary preparations in dust-covered bottles. Urinalysis was employed—practically no other laboratory procedure. The doctor made up his mind on the basis of symptoms and obvious physical indications. Long experience and natural shrewdness sharpened by necessity carried the best of the old family physicians far . . . inability to penetrate beneath the surface constantly forced the practitioner to guess or fumble."

Flexner's description of medical practice in the last decades of the 19th century is almost a perfect word-picture of general practice as I found it in the industrial areas of England in 1949. This section of general practice indeed provides an example of what Mannheim has defined as "non-contemporaneous contemporaneity."

If, in the process of becoming an anachronism, this branch of medicine had retained the ideals and the human elements of the old concepts of family doctoring we might even be able to defend and applaud what has happened; but it would be dishonest to pretend that it has.

SCOPE OF WORK

To display more fully the pattern of medical practice in industrial areas I must summarise the work done under these conditions.

Diagnosis

With limited time, facilities, and equipment, the doctor attempts to arrive at diagnoses and to refer those patients requiring more skilled attention to a place where such attention can be given. Much of this diagnostic work is empirical and some almost intuitive.

For the most part he deals with people of ages ranging from the late teens to the early sixties—the working section of the community. The school clinics and maternity and child-welfare clinics have relieved him of responsibility for caring, in a comprehensive way, for the school and preschool child, and also for the expectant

1. Flexner, A. Medical Education. London, 1925; p. 9.

and nursing mother. While he may attend many patients over sixty years of age, it is more a question of attending than caring for them: the time and the inclination to bring medical skills to bear on the problems of this age-group are sadly lacking.

Therapy

Treatment is even more restricted than diagnosis. Most of it is symptomatic, and nearly all of it is medicinal; for there is neither time nor opportunity for physical therapy or psychotherapy.

Without access to hospitals, doctors working under these conditions naturally do no major surgery. Most of them do no minor surgery either. It is rare indeed to see a practitioner in an industrial area open an abscess, put in a suture, remove a fingernail, or indeed undertake any procedure requiring sterilisation of instruments.

Midwifery

Before July, 1948, most industrial practitioners had long since yielded all responsibility for midwifery to the midwives and the maternity and child-welfare clinics. The few who continued to dabble in midwifery were mostly considered by midwives and other responsible observers to be a menace, and from what I saw of the antenatal work of some of them I can endorse this opinion.

Minor Laboratory Work

This is almost confined to testing urines for albumin and sugar, and then only on specific indication (e.g., an apparent toxæmia of pregnancy as opposed to routine antenatal test). A microscope is seldom seen among the G.P.'s equipment. Estimations of hæmoglobin and sedimentation-rates, and other simple and useful tests, are seldom done; though, as I said before, the surgery often contains odd pieces of apparatus, the instruments of such tests.

To analyse the doctor's work beyond this point is scarcely possible at present; nor, in my opinion, is it necessary. With a problem so crude, greater detail is of little but academic interest. Time-studies, age, sex, pathological, or other breakdowns of the doctor's work are out of the question with medical records either non-existent or so superficial as to be valueless for this purpose.

The important point is that this form of practice constitutes the pattern for most industrial areas, and that the pattern is accepted by doctor and patient alike. It is far away from the ideal of family doctoring on the one hand, and of modern scientific medical practice on the other; yet it is still wilfully identified with both of these.

Rural Practice

Rural practice is in many ways the antithesis of industrial practice; and in judging the quality of rural medical care we have to employ different criteria.

SURGERIES

Though built to the same pattern, and functionally little different, the country surgeries I visited were much pleasanter places than their town equivalents. For the most part they were better equipped—though I did see two without an examining couch and others where this was merely an adornment. Moreover, functional imperfections in a rural surgery are less important than the same imperfections in an urban one, where time and efficiency are paramount factors in the quality of the service which can be offered. In fact, premises which would be deplorable under urban conditions may pass as interesting and quaint examples of last-century architecture and custom when they are found, say, in a small south-country village. I saw some surgeries which had served successive doctors for over a century, and they served well enough today, though they might not satisfy an efficiency expert.

In a rural town the doctor's surgery must be considered in association with the cottage hospital, as a combined unit, the one supplementing the other. In isolated rural practice, on the other hand, the doctor's surgery assumes a new importance; it needs to be well enough equipped to enable him to meet responsibilities and demands which his colleagues nearer centres of civilisation can pass on at a moment's notice. At least by existing standards, the rural-town cottage-hospital combination is nearly always satisfactory (if we exclude the requirements for major operations); but the surgery of the isolated country practitioner is as often unsatisfactory in the extreme, and places him, and accordingly his patients, at a serious disadvantage.

I saw this latter point illustrated many times. For example, I have seen a patient sent many miles when a microscopical examination of urine might have confirmed a diagnosis of pyelitis rather than one of appendicitis; but there was no microscope. Similarly the absence of a microscope necessitates more empirical diagnosis, and consequent empirical therapy, than is desirable, and causes unnecessary inconvenience, expense, and sometimes danger to patients who have to travel to the nearest hospital. The microscope, indeed, is almost indispensable to the isolated country practitioner, yet is seldom included in his equipment; and other simple things, such as hæmoglobinometers and blood-sedimentation apparatus, are very uncommon. It is, of course, debatable how much the individual practitioner should attempt on his own; but it is surely fair to expect him to do whatever he is able to do for the convenience and benefit of his patients.

I saw some isolated rural practices which were quite as badly equipped as the worst industrial practices I visited. But in spite of the poorness of these surgeries and equipment, and the question of how a serious emergency would be met in them, it is impossible to assess the quality of such a practice on the same basis as would be appropriate for an urban practice. Not only has the country doctor the time to examine his patients but he also has the time to know them intimately; and his judgment is usually based on a greater knowledge and a deeper consideration, both of the person and of the ailment, than his city colleagues can compass.

This is not to say that he could not do much better work under better conditions, but rather that the good country doctor can and does overcome the obstacles of bad environment, in terms of surgery and equipment, in a way impossible for the city doctor. Furthermore, the country G.P. is fulfilling a function, in the psychological as distinct from the organic field, in a real way which again is impossible for the city doctor. A rural practitioner, who may only be "fair" so far as organic medicine is concerned, may still qualify as an excellent family doctor.

STANDARD OF WORK

Under the conditions prevailing in rural practice, the quality of the medical care is governed chiefly by the quality of the doctor himself. This is very difficult to assess but not difficult to recognise.

During my study, I met and worked with some men who could be graded, on an absolute standard, as first-class. They were good clinicians, good technicians, and fine humanists. Of the others, the majority, while belonging to the third category, rapidly fell away through fair to bad in the first and the second. Yet, as I have just said, this does not necessarily mean that they were not "good" doctors.

This again brings up the question of criteria. In seeking a sample of "good," "average," and "bad" practices, I found it hard to get people to nominate "bad" doctors in rural areas. There is a tendency to regard the country doctor as "good," if for no other reason than the urge to identify him with our concept of the ideal—the real family doctor. However, in the south, where a more or less random sample was taken,

I was better able to make an unbiased classification of the doctors I visited.

From the strictly technical standpoint many of them were "bad": though they all had a working knowledge of the use of such modern preparations as penicillin and the sulpha drugs, their knowledge on the whole was out of date. But if the skills they exercised were very limited in any one field, they embraced many fields; and so long as the man was a good and conscientious observer he was usually a "good" doctor in the circumstances in which he practised.

However, I worked with some who, though regarded as "good" by both the profession and the public, were in fact "bad" in absolute terms. All the men I would put in this category were well qualified from reputable medical schools; most of them had been in practice for many years and were regarded, more or less, as "the squire." Their chief fault, as I saw it, was that they were not good or thorough observers of either organic or psychological problems, and took no pains to check their impressions and opinions by objective investigation. They worked to a routine and within limits that had long since dulled their curiosity and their sensitivity. For example:

Taking a surgery with a practitioner who enjoyed a high reputation both professionally and publicly, I saw a man come in who was icteric and almost emaciated. The object of his visit was to get a bottle of medicine for his wife. I asked, after he had gone, what was the cause of his strange colour and condition. The answer was "Oh, I don't know, there's nothing much wrong with him; he's been like that for three years."

At another time a doctor took me to see a case of which he was particularly proud—an old man of sixty-five with a dry gangrenous leg, which had been preserved by keeping the patient in bed for twelve months since the sudden onset of the condition, still undiagnosed. The doctor visited regularly to "dress" the dead appendage, and his attitude was that here was an old man comfortable enough in bed and not requiring any active therapy.

In the same region I spent some days with a young doctor who had only a small number of patients but who tried to give a service satisfying his own high standards. As this practice was very isolated and poorly served by consultant and laboratory services, he had built his own little laboratory and fitted it with apparatus which enabled him to do many things not normally considered part of general practice. He did a lot of microscopy and such tests as blood-sugars, blood-ureas, and clotting-times; also he had a portable electrocardiograph and other equipment which enabled him to do a most comprehensive job of diagnosis and therapy.

While I am not saying that this should be the model of general practice, or that this man was not taking on too much, I must emphasise that as an individual, looking after 1300 patients, he was exercising a wider range of skills than any other G.P. I have seen, and in my opinion exercising them within the limits of safety. Beyond dispute he was offering a quality of service far above anything his colleagues could offer. The point I want to make is that these colleagues, who had larger practices, enjoyed unassailable reputations, and had no cause for jealousy, regarded this doctor as crazy. In their unqualified opinions he was mad—merely because he endeavoured to exercise to the limit the skills of which he was capable in the interests of his patients. Because of his small practice, and in spite of his excellent work, he was suffering serious financial embarrassment, and has probably by now been forced out of his practice and into some more lucrative field.

I also came across a "group" practice, which had been operating for about eighteen years in a small village. It was run by a group of four—three partners and an assistant. Their surgery was the first and only one I saw which had been carefully planned and built as a separate working unit, and, though they would like to improve on the design, it was far better than any other surgery I visited in Great Britain.

In qualifications and experience the doctors working this group were wholly comparable with their neighbours. But, from the point of view of the patient, the service they offered was vastly superior to anything that could be provided by the surrounding doctors. They ran a highly organised group practice, and by virtue of their good organisation alone they had more time to devote to their work and interests. One was particularly interested in surgery and another in obstetrics, but they were all general practitioners in the full meaning of the term. Their records were better than any others I have seen in England (I still would not say that they were good); they employed clerical and nursing assistance; and they did not share the common opinion that the expense of such assistance was unjustified or could not be carried by a practice of moderate size and income. Their whole attitude of mind was different from that of the average doctor; they were constantly trying to improve their equipment and to widen their scope of work, and they were interested in children and old people to a degree not usual in the general practitioner.

THE RURAL PATTERN

Enough has been said to illustrate the two points I want to make at this stage:

1. That the whole pattern of practice in rural areas differs greatly from that in industrial areas.
2. That we must apply different criteria when judging the quality of medical care offered by, or possible within, these two types of practice.

For purposes of contrast I summarise the scope of work undertaken by the rural practitioner:

Diagnosis

Rural practitioners often undertake a high level of diagnostic responsibility, though some of them work in the same empirical way as their industrial colleagues and to about the same elementary level. The difference is that in the country the level usually depends on the doctor's choice and is not imposed by his environment.

With reasonable cottage-hospital facilities the rural practitioner can and often does work to much the same level as the consultant physician, with the added advantage that he knows his patients intimately and often over a long period.

He deals with people of all ages—not primarily with the working section of the community. Nevertheless, for the most part he has the same attitude as his urban colleagues towards the medical problems of his elderly or "chronic" patients.

Therapy

The therapeutic responsibility of the rural practitioner is also wide. He seldom limits himself to medicinal treatment. Physical and psychological therapy come well within his terms of reference; minor surgical procedures are almost a daily routine; and, where he has access to a cottage hospital, he commonly undertakes major surgery.

Midwifery

Though the trend for many years has been away from general-practice obstetrics, the country doctor still usually does some of the midwifery of his area. From such observations as I was able to make, the average rural G.P. is no obstetric paragon. However, through his association with mother and child he retains an intimacy and a bond which marks him as a family doctor.

Minor Laboratory Work

Again, the amount of minor laboratory work undertaken by the rural G.P. is determined by his own interest rather than by the circumstances which restrict the man in industrial practice. A still significant proportion of country doctors carry their side-bench work beyond casually testing an odd urine for sugar and albumin. Some do quite advanced laboratory work even within the confines of their own surgery.

The range of work undertaken in different practices is wide; but it seems clear that the rural practitioner on the one hand still approximates to the ideal of the family doctor, and, on the other, at least aspires to meet the demands of modern science and procedure. It must be said, however, that over a considerable section of rural practice these aspirations do not take us very far, and that, compared with his colleagues in the industrial areas, the rural practitioner must accept a greater measure of responsibility for his own shortcomings. Conversely he is entitled to due respect for his achievements.

In the final analysis present-day rural practice remains an anachronism, though one which has retained many of the virtues of the past.

Urban-residential Practice

Urban-residential practice is dealt with out of turn because, though it is intermediate between the extremes of industrial and rural practice, it is less easily defined in terms of scope or quality. "Good" practices of this type resemble the best of rural practice, and "bad" practices the kind of thing so common in industrial areas; yet urban-residential practice has certain features which establish a distinctive pattern.

Some of these are superficial—no more than a veneer of sophistication on the crudities of industrial practice. Others are more basic, and quite characteristic. The superficial differences are perhaps the more obvious.

SURGERIES

Take the surgeries, for example. Most of them follow the two-room design of the industrial type, but there is a world of difference in the furnishings, style, and regard for patients' comfort and tastes. A large proportion of these surgeries have been "made over" from the front rooms of a family home in much the same way as the surgeries of the industrial practitioner have been adapted from an erstwhile shop or residence. But I have been in surgeries built by the doctor for the specific purpose, and have been impressed by the fact that they too have usually followed the two-room (waiting-room and consulting-room) pattern. Evidently the belief that two rooms are all that is necessary to run a general practice is firmly rooted in the medical mind. Twice I have met doctors who at some stage were adventurous enough to build themselves three-room surgeries, but who, over the years, have reverted to type and are now working in two and using the third room for storage. There are, of course, exceptions to this rule, and some doctors have built surgeries which are excellent from the functional point of view; but these are very definitely exceptions. One cannot suppose that the difference in capital outlay required to construct a good as opposed to an unsatisfactory surgery has been the determining factor. The designs must be primarily the result of an unquestioning acceptance of the traditions of the last century and a failure to think about general practice in contemporary and constructive terms.

The waiting-room in an urban-residential practice is in striking contrast to the waiting-rooms in industrial practice; for the patient with more cultivated taste expects attention to the niceties. Similarly the consulting-room is of a more refined type: the basic "heavy" equipment is more attractive in appearance; instrument cupboards, containing sometimes quite an extraordinary range of instruments, are usually in evidence; and equipment for filing records is often an asset to the furnishings. Yet these differences in the two types of practice, impressive though they look, are actually very superficial and often make very little difference to the quality of care offered. Thus, despite the advantage of good filing equipment, I have noticed little significant difference in record-keeping in the two types of practice. Again, except where in absolute terms he qualifies as a "good" doctor, I have seldom observed that the more abundant equipment carried by the urban-residential practitioner has been put to much significant use. I could cite numerous cases of patients presenting histories indicating the need for ophthalmoscopic examination who have left the surgery without any such examination, though an excellent and expensive ophthalmoscope lay within reach of the doctor; and in some of the cases already mentioned, where rectal or vaginal examination seemed desirable, the patient was standing within feet of a selection of very fine specula, never called into service.

There is absolutely no cynicism about these remarks. It is perfectly natural that the demand for well-appointed waiting and consulting rooms should lead to their being supplied. But it is important that we should avoid the assumption that if a surgery is attractively appointed it is functionally good, and the further assumption that an apparently good surgery means good medical care. In the course of my study I continually found these assumptions in the minds of people from whom a more objective opinion might have been expected.

I would say that though most of the urban-residential surgeries I visited were better equipped and better appointed, they were functionally almost as unsatisfactory as their industrial-area equivalents.

NATURE OF THE WORK

In urban-residential areas the capacity of the individual doctor has more free play than in industrial areas, but usually less than in the countryside. The few doctors left with hospital privileges have much the same scope of work as the rural practitioner, and may know their patients in much the same way. The majority, however, work under greater pressure and lack these hospital privileges, and on the average they represent a rather unhappy compromise between the two extremes.

The number of patients handled by the urban-residential practitioner is very variable, and an extra 500–600 can reduce the standard of his work much more appreciably than a similar numerical increase will reduce the standard of work of the industrial practitioner.

As local-authority services do not operate to nearly the same extent in these better residential environments, the general practitioner should carry a greater responsibility, for example, in the care of mother and child. But I saw little to suggest that he does so; and I can only conclude that in these areas the work which is done elsewhere by the local-authority clinics is usually not done satisfactorily or not done at all.

Compared with the industrial doctor, the urban-residential doctor spends a considerably longer time on each patient. But on the whole there seems to be little difference in the time spent on physical examination. There are, of course, exceptions.

The scope of the urban-residential practitioner's work has possibly undergone more change of late years than that of either of the other two groups; and for this if no other reason it is harder to establish a pattern. The doctor's individual capacity is still reflected in his work, but to an ever-decreasing extent. He has more social contact with his consultant colleagues than doctors have in either of the other environments, but probably no more professional contact.

Urban-residential practice is certainly the most difficult to assess. It represents the transition from the ideal of family practice to the "casualty-clearing station" type of practice seen in industrial areas. While it obviously does not meet all the requirements of medical care, it is more or less immune from the contrary criticisms which can be directed against rural practice on the one hand and industrial practice on the other.

SPECIFIC EXAMPLES OF GENERAL PRACTICE

I shall now describe a few examples of practice under the various environmental conditions, including one or two which illustrate the effect of differences in the number of patients or the history of the practice.

Industrial Practice

I

Two partners and an assistant. Approximately 10,000 patients on the list. No private patients.

This practice, locally classified as "good," had been established for many years and had always had a large "panel" list under the National Health Insurance Act. The district it served was densely populated, and in area no more than a few square miles; most of the housing was very bad, though some slum clearance had gone on at different times and there were rehousing estates of various dates. The inhabitants were largely engaged in heavy or light industry, the former predominating.

The surgery was on the ground floor of a tenement house and was difficult of access for many patients. It comprised a very small waiting-room, two consulting-rooms, and a dispensary; and, though the site was unsuitable, it was well equipped compared with most of the other industrial surgeries I visited.

The doctors held morning and evening consulting hours six days a week, two of them working simultaneously in the surgery while the third was out on "calls." The consulting "hour" always extended to two or three hours, and they were seeing anything from 30 to 50 patients each during the consulting period. They employed a lady dispenser, who also acted as telephonist and receptionist and undertook some clerical duties.

An attempt was made to keep a file record, but this consisted mainly of a very few brief notes pertaining to the "really serious illnesses," and such letters and reports as came back from the various hospitals to which patients had been referred. A remarkably large proportion of the record cards which I saw coming out of, and going back into, the files bore nothing more than the patient's name, age, and address.

Two of the doctors undertook domiciliary midwifery; between them they totalled about 25 cases a year.

On the occasions I attended the surgery, the waiting-room was packed and sometimes patients were standing in the front grounds. I was informed that this was not a heavy period, there being a relative absence of epidemics. The average length of a consultation was three to five minutes, whether it was a new case or a return visit; a "serious case" or one involving some degree of physical examination would take, perhaps, ten to fifteen minutes.

It is hardly necessary to say that, in such circumstances and working to such a schedule, physical examinations were cursory and were kept to a minimum. Most examinations were made with the patient sitting or standing, and with removal of the least possible amount of clothing. The examining couch was seldom called into use. I never saw vaginal, rectal, or ophthalmoscopic examination attempted, though during my time at this surgery many patients were seen who seemed to me to require one or other of these examinations. In all such cases I asked the doctor and/or the patient whether such an examination had been made at a previous time, and the answer was always No. It must, however, be said that a proportion of these people were sent to hospital for the opinion of a specialist. Indeed in most cases where the brief histories taken, or the examination made, suggested potentially serious organic disease, the patient was referred to an outpatient department. In this particular practice a great number of patients were similarly referred for laboratory and radiological diagnostic tests. Usually all the doctor wanted was the result of the particular test and not another opinion.

These practitioners undertook the antenatal care of their own patients. This was done in a very loose way. Inquiry was made as to how the patient felt; blood-pressures were taken only on some specific indication; samples of urine were brought only occasionally and then examined only if there was some special reason. In the only case of early pregnancy which came in during my stay no attempt was made to make a pelvic or general examination: the patient was told to "come back in a couple of months to be antenataled" and it was left at that. The chief purpose of the visit, so far as both patient and doctor were concerned, seemed to be the supply of certificates for the various benefits accorded to the expectant mother. No antenatal records were kept.

The treatment of the numerous children who were brought in during my time in this practice was similar to that of the adults, but on the least suspicion of serious illness they were referred to a pædiatric clinic at the local hospital.

Though this practice had run a dispensary for many years, the "bottle of medicine" mentality was not highly developed, and indiscriminate prescribing seemed to be at a minimum.

It is often very difficult to assess the legitimacy of claims made for sickness benefits and the like, but I formed the impression that these practitioners erred considerably on the side of leniency. The time and effort required to meet the demands of certification did not seem excessive.

I made a considerable number of domiciliary visits with these doctors. It was always a rush to get through the list, and the same factors as led to cursory examination in the surgery operated in home calls also. Except in special circumstances, three or four minutes sufficed for each visit.

In both surgery and domiciliary work a lack of interest in the non-acute cases was conspicuous—particularly with elderly or "chronic" patients. Though these were visited with scrupulous conscientiousness, it was apparently not thought worth bringing medical skills to bear on their problems. In fact, the over-sixties suffering from any condition resulting in long-continued immobilisation were regarded as more or less hopeless cases, worthy of pity and charity but scarcely of serious medical attention.

The many patients seen who presented themselves obviously for psychological and not for organic reasons were treated with hearty reassurance and quick dismissal.

These doctors had no hospital or nursing-home facilities for their own use. They had no visiting rights at the large general or special hospitals. They knew and were on good terms with the consultants of the district, but saw very little of them. They were very hard-working and conscientious, and, as far as one could ascertain from the limited clinical procedures they undertook, they were good clinicians, at least within the limits set by the type of work they were doing. Certainly they were highly skilled at snap diagnosis.

This was very much the picture in all the "good" industrial practices where the conditions of work were similar. The only absolute difference was that in most of them no midwifery was done. The man who, in terms of qualifications and hospital experience, was the best industrial practitioner I saw working under comparable conditions conducted his practice in just the same way. He was one of a partnership of four. In his company, I did a round which took us to 38 houses between 11 A.M. and 4.30 P.M. (with time off for lunch). There is little need to elaborate on the perfunctory nature of the visits or the effects of such a manner of practice on a man of very high clinical ability. This particular

partnership was the only industrial practice I visited where there was any significant division of the field of work. One partner had taken responsibility for the "old chronics," which not only reduced the load on his colleagues handling "acute" cases but also greatly benefited the old patients.

Throughout the "good" industrial practices visited, premises and equipment were unsatisfactory; record-keeping, at the best, was not good; antenatal work, where done at all, was casual; and the routine work of diagnosis and therapy was limited by time and circumstance much as in the practice I have described.

II

Four partners and two assistants. Approximately 20,000 patients on the list.

This practice was of fairly long standing, and under the National Health Insurance Act had carried a very large "panel" list. It was in a densely populated area, where light industry predominated and housing conditions were deplorable; whole terraces of houses had been condemned for years, but little in the way of slum clearance had been undertaken. The boundaries of the practice encompassed several square miles, and the total mileage covered by the doctors in the year was large.

The surgery consisted of a small dilapidated waiting-room, three equally small and untidy consulting-rooms, and a kind of cupboard which served as a dispensary (the practice had always done its own dispensing). The consulting-rooms were dirty and ill equipped. There were no examining couches and no apparent means of sterilising anything; indeed, apart from a few rusty and dusty antique instruments, there was no sign of any sort of equipment. Large stock bottles were standing all over the place, and the desk and floor were littered with papers. Only one of the consulting-rooms was equipped with a hand-basin and hot and cold water.

I made my visit during an afternoon consulting hour, and found a queue of people extending about 200 yards up the street, waiting their turn to see the doctors; they were standing packed in the waiting-room and I had to force an entrance. I was made welcome "to see the procession," given a seat and a cup of tea, and invited to stay "as long as I liked." I was told, not without pride, that "we have seen 500 already today"; and I have no reason to doubt it.

During my stay of an hour and a quarter about 120 more patients came in. They were "seen" by three different doctors, who replaced one another with almost bewildering rapidity. No pretence was made at real examination of any of these patients. An occasional temperature or pulse-rate was taken; four or five times a stethoscope was applied to a point somewhere below the thyroid gland and some such utterance made as "ah, a bit chesty."

The bottle of medicine was the sine-qua-non of this practice. One small child came in requesting "a bottle for the lady over the road." He could give no further information, apart from her name and address, which obviously conveyed nothing to the doctor; but he produced a dirty-looking bottle with some dregs in the bottom, and after a glance the doctor prescribed a small something, passed it to the child, and called the next patient. Other patients came requesting "a note for bronchitis" or some similar malady. With no further formality than "name and address?" this was issued and the patient dismissed. "Notes" and "bottles" were asked for by almost everyone seen, and were supplied on request. Almost everyone seemed to have "a slight touch" of something or other; bronchitis most commonly, occasionally pleurisy, once or twice rheumatism, and once measles.

One patient produced his identity card in lieu of his medical card, to be told "this isn't your medical card." He replied without hesitation: "I know that, and I've been using it here for three months. This is the first time you've noticed."

A number of patients, either because their complaints sounded serious, or because their history was suggestive and they looked really ill, were referred to hospital. This procedure seemed to be known as "sending them through."

Around 4 P.M. the queue, still extending well up the street, was broken off and the front door was locked. I was told that sometimes the housekeeper was posted at the back gate "to stop them coming in there," and that "if we did not do this the queue would remain from 9 A.M. to 9 P.M. and we'd never get our visits done."

The visiting-list was made up, and though I did not count the number of visits to be made it was certainly most formidable. When I asked about records, the reply was: "We have no time for that sort of nonsense. However, we have a secretary who comes in two or three days a week, and makes up records from these old prescription pads. Of course she's months behind." These practitioners do a considerable amount of midwifery and, I was informed, "run our own nursing-home." When asked about antenatal work, the senior member of the firm said: "We don't have much time for that sort of thing." Unfortunately I had no opportunity to pay any domiciliary visits with these doctors, or to see their nursing-home.

The doctors themselves seemed intelligent and made no real effort to explain or excuse their way of practice. Obviously the work had been done in this way for a long time, and the method was accepted, by them and their patients at least, as satisfactory or inevitable. The younger members of the partnership with whom I talked had a high regard for their seniors and claimed that they "don't miss much." One of them, who had been in the practice for only about two years, seemed somewhat perturbed by the nature of things; but "it is all that can be done in the circumstances," he said.

I set these two examples of large industrial practice at the upper and lower limits of "ordinary" industrial practice. Doubtless examples could be found that would be better than the example cited as "good," but I did not see them in England. If better practices existed within the industrial areas studied, I fancy I would have been referred to at least one.

III

Single-handed practices. Small patient-load.

I do not imagine that industrial areas contain many small single-handed practices; but I recall two. Practice A was run by a practitioner who had chosen to work in an industrial area and who limited his list to about 1500 patients, claiming that he could not do justice to more. Practice B was run by a practitioner who had been establishing himself before the war, but on returning from the Services had found his practice almost gone. He had had to begin again to build it up, and when I saw him he had just over 2000 patients. Obviously these two could be called special cases, and so probably could most others which would fall into this group. A few of the doctors would be young and recently started in practice.

Both the men I have mentioned had their surgeries at their homes. In both cases they had adapted two rooms, originally part of the dwelling, to their needs. Both surgeries were reasonably well equipped, that of the elder (practice A) particularly well. His waiting and consulting rooms were comfortably and tastefully furnished, and the latter was well supplied with the essential instruments of practice. This surgery was

far more like the type of thing seen in the better-class residential practices than the usual industrial surgery.

The practices covered similar areas, and the housing and economic conditions in the two places were similar, housing being bad in both. There the comparison ceases, and I shall describe them separately. It should be noted that both these practices were locally described to me as "good."

Practice A.—All patients were seen by appointment; a quarter of an hour was assigned to each, but whenever necessary more time was given. Patients on return visits requiring certificates or repeat prescriptions were asked to come at the beginning of the consulting hour, and 10–12 came within the hour. Physical examinations were thorough, and reasonably full records were kept. During my time in this practice I saw no-one referred for an opinion until the case had been investigated as far as could be done in the surgery. When necessary, urine was examined microscopically, and hæmoglobin and blood-sedimentation rates were estimated. If possible, when further laboratory tests were required, a specimen rather than the patient was sent to the hospital.

Minor surgical procedures, such as the opening of superficial abscesses, strapping of sprains, removal of fingernails, and minor sutures, were done in the surgery. Psychological problems received careful attention and a good deal of time was devoted to them when necessary. No midwifery had been done for some years, but the doctor was about to recommence booking cases, because his income had dropped appreciably since July 5, 1948.

Though this had been a dispensing practice for many years, there was no evidence of the "bottle of medicine" mentality. All claims for sickness and other benefits were examined carefully from the social and psychological angle, as well as the organic.

There was ample time for domiciliary visits, and the same thorough routine was followed in them. The doctor was on friendly terms with many of the consultants in the area, and, though he had no visiting rights in any of the hospitals, he manàged to see many of his patients who had been admitted, and often did a round with one or other of the local consultants.

Practice B.—With only a small difference in the patient-load of this practice, the doctor was seeing about three times as many people at each consulting hour and making about twice as many domiciliary visits. There was no appointment system.

History-taking and physical examinations were cursory. The doctor told me that he did not attempt to do rectal examinations, but that if a case was sufficiently suggestive of cancer of the rectum he sent it straight to hospital. Wherever indicated, some sort of an examination was made of chest or abdomen, and if symptoms or signs were in the least suggestive of possibly serious organic disease the patient was referred to an outpatient department for another opinion. No great effort was made to define the possibilities before referring the patient.

During my stay in the practice no records were made of any of the patients seen. Files and record cards were kept on what were considered important points, but from what I saw of the cards the notes were mainly on prescriptions issued.

This doctor booked confinements and did most of his own antenatal work. He asked about the patient's health since her last visit, took her blood-pressure, and examined her urine. No records of these were kept unless there seemed to be some abnormality. None of the minor surgical procedures undertaken in the other practice were attempted here: the patient was sent to hospital.

Domiciliary visits amounted to 10–15 a day (except during epidemics, when they were considerably more numerous). This allowed the doctor to spend a reasonable time on each visit; but the actual examinations made were of the same cursory kind as in the surgery.

Rural Practice

I

Three partners. About 10,000 patients. Good cottage-hospital facilities and three small nursing-homes.

This practice, established for almost a century in a town now having 20,000 inhabitants, had never had more than a few hundred on the "panel." There were several other doctors in the town, practising alone or in pairs.

With two senior partners and one junior, the practice served an area extending about ten miles from the surgery, with good road communications. Most of the people were engaged in farming, but the town had some light industry. Both town and countryside could be described as prosperous.

The surgery was a converted shop and residence above the shop. The waiting-room was downstairs and was adequate and well furnished. There was also a dispensary with a dispenser-receptionist working in a small room opening on the waiting-room. Upstairs there were three consulting-rooms, and an office where records were kept and other clerical work was done. A full-time male clerk lived on the premises and worked for all three doctors. The consulting-rooms were spacious and typical of the all-purpose type described previously. They were well equipped both basically and with instruments.

The cottage hospital was run by all the G.P.s in the town, but this partnership made by far the greatest use of it. It was a 50-bed unit, with both medical and surgical wards, a fairly up-to-date operating-theatre, a small department of physiotherapy, an X-ray department, and a small recently acquired department of pathology. This last, though it was not very well equipped, employed a junior and a senior technician and met most of the requirements of the hospital and the local practitioners. Consultant surgeons and physicians visited the hospital once a month, or more frequently if asked.

There were three small private nursing-homes. One was a 5-bed unit for maternity cases only; the other two had about 10 beds each, and an operating-theatre, and took general medical and surgical cases.

To some extent the three partners divided their routine duties. One did most of the surgery, not only for his own practice but for the district; one did some "minor" surgery, such as tonsillectomies and appendicectomies; and the third gave most of the anæsthetics. Night-duty was worked on a roster system and they relieved one another for days off. All three did their own midwifery, which amounted to 10–30 confinements each per year. The surgeon of the partnership undertook most of the abnormal midwifery for the district, including all cæsarean sections.

There were three consulting hours six days a week, with two doctors working simultaneously at each period. No routine appointment system for consulting hours had been introduced, but special appointments would be made when patients had to come a long way, or where transport communications were bad, or when it was expected that consultation and examination would take a long time. About 15–20 patients were seen by each doctor during a consulting "hour," which sometimes lasted as long as one and a half hours; and as much as twenty minutes would be devoted to a patient needing particular attention. If further or more detailed examination was deemed necessary he was brought back to the surgery by appointment or seen as an outpatient at the cottage hospital. Apart from simple urine-testing, all laboratory tests were done by a technician in the hospital pathology department.

Record-keeping was unsatisfactory, even on the more important and serious cases. Antenatal work was much as described for other practices; notes were made only if some abnormality was suspected.

At the time I was in this practice domiciliary visits were averaging some 10–20 per day per doctor—mostly nearer the lower figure—and I was told that this was usual except during winter epidemics. At this rate ample time could be devoted to those patients who required detailed attention and examination. Though the domiciliary visits involved a lot of driving, roads were good and farms and houses readily accessible, and the time spent "on the road" did not seem disproportionate.

The cottage hospital was used primarily for surgical cases, but a few beds were allotted to medical ones. Difficult surgery was undertaken by the G.P. surgeon, and as little as possible was "given away" to visiting consultants or sent to the larger city hospitals. I was told that potential cases for cæsarean section were kept in the district and admitted to the local hospital as "emergencies" rather than let the case be "lost" to a city hospital. I was also told that the figure for cæsarean sections in this area is 25 times the average figure for the United Kingdom. I have not verified this statement, but in the circumstances the rate would certainly be well above average.

The whole question of the general practitioner with cottage-hospital facilities, and the "excesses" of surgery performed under these conditions, will be considered later in this report.

Compared with those obtaining in industrial areas, the standards of physical examination in this practice were very good. If they were judged against the disciplines and routines of examination in any reasonable hospital, they would seem superficial and not too satisfactory; but they were thorough and comprehensive enough to assure that most organic diseases would not be missed. It was evident that the doctors knew the patients intimately and were constantly watching for aberrations from the personal norm; and within the limits set by time, equipment, and general facilities their routine work would pass as excellent. They paid serious attention to the psychological problems their patients brought them, and though they were obviously not versed in modern psychiatric theory their knowledge of the patients and their understanding of their ways and habits enabled them to give valuable help.

In short, these practitioners were "family doctoring" and at the same time aspiring to relatively good standards in organic medicine. Comparatively, if not in absolute terms, the organisational side of the practice was also good.

II

Three partners. About 10,000 patients. Fair cottage-hospital facilities.

This practice, established for many years in a town now having some 25,000 inhabitants, had also never had more than a few hundred on the "panel." Its general similarity to the one I have just described will at once be noted. Like the other, it was referred to me as a "good" practice, and I am describing it mainly to demonstrate how wide a range of medical conduct is still accepted in professional circles as within this category. The medical people I consulted about my sampling did not classify any rural practice as "bad," though they thought that some of the practitioners were doing too much surgery in the cottage hospitals.

The similarity between this and the previous practice extended beyond the broad description given above: the surgery lay-out, the staffing, and the organisation were all very much the same, except that this practice was less well equipped. But there was a big difference, I thought, in the work of the doctors. Though, like the others, they devoted ten to twenty minutes to each consultation, their standard of physical examination was about the same as I saw in the large industrial practices: it was superficial, restricted to the offending organ, or concerned with some expressed symptom. Similarly, the psychological problems were considered casually and treated by reassurance in a most empirical way. I did not myself see a single laboratory test done in this practice. A bottle of medicine was almost always prescribed, and certification for sickness benefits was generous and unconsidered. The antenatal work I witnessed consisted in a brief chat between the doctor and the expectant mother, without an examination of any kind.

In this particular practice there were many elderly patients, and they were treated with the greatest kindness—but not with medical skill. In the course of domiciliary visits I stood at the bedside of several old people suffering from congestive cardiac failure and receiving, as treatment, continuous bed rest and frequent injections of morphine. One such patient, with a generalised dropsy, had had six months' bed rest and morphine at home without investigation before being admitted to the cottage hospital, where paracentesis abdomini was performed as initial treatment. I also saw several patients who had had a mild "stroke," and they too were bed-ridden and receiving the morphine and reassurance therapy.

Bad as this account sounds, and bad as the practice in fact was, in terms of human kindliness these doctors were doing a job of "family doctoring" which, in contrast with what goes on in the industrial areas, must be considered good. Furthermore, at the more leisurely pace of work, and with some personal knowledge of their patients, I believe they were doing at least an equally good job of organic diagnosis, except for the elderly. Locally, their ability was highly regarded, primarily because they could open an abdomen and remove an acute appendix or untwist a torsion of the ovary; and they were well liked because they were essentially kind and human.

THE VILLAGE DOCTOR

The above type of country-town cottage-hospital practice is almost as distinct from isolated individual rural practice as it is from industrial practice. In many remote areas the country doctor has not moved very far from the horse-and-buggy days; he has learned to use some of the new drugs such as penicillin, and may have caught up on a few new techniques; but essentially he is comparable in most respects to the old family doctor of the last century.

His surgery has often served successive doctors for many decades, and sometimes there has been little change in, or addition to, his equipment over the same period. Occasionally you find the young doctor (or once young doctor) who has started practising in a quiet country village and who has set about revolutionising the way of practice and bringing modern medicine to the villagers; after a time these doctors usually strike a happy compromise between scientific zeal and human relations, and perhaps represent the very best of general practice.

In this realm the doctor is the absolute autocrat, and what he does and how he does it is no more and no less than a reflection of his personal capacity. So a description of this type of practice in any detail would amount to no more than a description of a number of individual men. I shall later say something about the problems which arise from such practices; and I must point out at this stage that many of them (some enjoying excellent reputations) are so badly equipped as to be quite unable to meet a serious emergency, even by way of offering satisfactory first-aid. This in no way alters

the fact that the doctors running them are often first-class family doctors. We see again how hard it is to equate the dictates of modern medicine with the essential humanism of our concept of general practice.

Urban-residential Practice

I

One doctor. About 2000 patients. Access to two small nursing-homes.

This practice, about twenty-five years old, had been run by the practitioner for fourteen years, and he had never taken "panel" patients. It was one of the few I visited where the surgery had been built for its purpose, and there were three rooms, though the third had not been used (except for storage) for many years. The waiting-room was commodious, well furnished, and altogether pleasant. The consulting-room was well laid out and well equipped.

The doctor employed no clerical or nursing assistance, but he worked to an appointment system, kept fairly good records, and displayed much better organisational ability than is usual. Appointments were set at quarter-hour intervals, but if half an hour or more was needed to complete a consultation and examination this time was taken. Physical examination was thorough, and during my stay in this practice clinical laboratory tests were undertaken whenever indicated. They were done at the local hospital, but the doctor was having increasing difficulty about this because he had lately lost his place on the hospital staff. Similarly, he had been accustomed to doing his own minor surgery at the hospital, and as his private surgery was not equipped for this purpose he now had to send patients, whom previously he would have had no hesitation in treating himself, to another doctor.

This practice provided an excellent example of the really good doctor who is suffering in every respect from the curtailment of his terms of reference. Through his past association with the hospital, he knew intimately, and was on excellent terms with, his consultant colleagues, and this long association stood him in good stead after his exclusion from the hospital staff. He also knew his patients intimately and was at great pains to handle their psychological problems as well as possible; but at the same time he tolerated no abuse of his services and was certainly not burdened by "silly" claims on his time. He undertook no major surgery at all, but he did a good deal of midwifery and gave thorough attention to expectant mothers throughout pregnancy.

Within the present concept of individual general practice, the work here was as good as one could hope to see. But it was being done under increasing difficulties.

II

One doctor. About 2500 patients. Access to small local hospital and nursing-homes.

This long-established practice, run by the same doctor for the past dozen years, had had about 300–400 patients under National Health Insurance. The consulting-room and waiting-room were adapted from the two front rooms of the residence, and their arrangement gave no guarantee of privacy to either the patients or the doctor's family. Both rooms were tastefully and comfortably furnished, but the chaotic state of the consulting-room made smooth and efficient work very difficult. It was poorly equipped and no pretence was made of keeping records. There was no appointment system, and consultations involved a minimum of physical examination. A considerable amount of dispensing was done, and a bottle of medicine was the usual termination of a consultation.

The doctor had access to the local hospital, but he did not seem to take any great advantage of this and made very little use of the laboratory service, though he sent many patients for radiography. He did no midwifery and apparently had very little to do with the children of the area.

Comparing this practice with the previous one, the bigger demand for service was out of all proportion to the additional 500 patients on the list. The doctor worked really hard in his endeavour to meet this demand—proportionately much harder than the first doctor. But the necessity for this hard work arose from his failure to exercise reasonable discipline with his patients. Though the two practices were both nominated as "good," the first was in fact well above the average of the practices of this type which I studied, while the second was below the average.

Symptoms and Causes

An account of some of the patients who passed through surgeries I visited would make quite dramatic reading. I could list many who gave histories suggestive of malignant disease or other obvious and readily diagnosable conditions, but who left, bearing a bottle of medicine, without having had any physical examination; and I could tell some very sad stories of people dying in unnecessary discomfort for want (in my opinion) of a little elementary medical skill. However, I do not believe that such stories, however striking in themselves, would contribute anything to the analysis or solution of the problems of general practice. When an individual error is pointed out, the usual reply is "we can all make mistakes." This is certainly true in general practice, and the individual mistake pales into insignificance beside the predisposing factors which make serious mistakes not only possible but in some circumstances highly probable. I have concerned myself throughout with these causes and predisposing factors and not with collecting examples of errors. I regard the errors as merely symptoms of the chronic illness of general practice today.

It would be foolish, however, to examine general practice in a vacuum, and before I try to summarise its present state I must say something about the relationship of this branch of medicine with other agencies of medical care.

THE GENERAL PRACTITIONER, THE HOSPITAL, AND THE SPECIALIST

It is difficult to say very much about the general practitioner's relation to hospital and specialist services; for, except in a remote way, he has little to do with either. He has no direct access to the larger institutions and sees little or nothing of the people who work in them. When he refers a patient he does so either by telephone or with a written introduction outlining the case-history and stating his own opinion. In due course he gets back a written summary of the consultant's views and suggestions, or, if the patient has been admitted for treatment, a statement of the principal things that have been done, with advice about further management.

His other line of communication with the specialist is through domiciliary consultations; but the average practitioner has few of these. Some I have talked with have as few as one or two a year, and I should think that ten or twenty would be quite a high figure.

The degree of liaison between practitioner and specialist varies from place to place. It is least in the industrial areas—i.e., in those practices closest to the large hospitals—and seems to be greatest in upper-middle-class residential areas. Of course, before the introduction of the National Health Service Act, domiciliary consultation was largely a function of the patient's ability to buy the service, and it will be interesting to note what happens now that it can be had by all. Such observations as I was able to make on this point will be discussed

when I come to consider the effects of the Act on general practice.

In some places practitioners and specialists move more nearly on the same social plane, which undoubtedly brings them into closer professional contact also. This was particularly noticeable in a relatively small yet highly developed northern city which I visited. There the G.P.s and the specialists are often products of the same school and are not infrequently of about the same vintage. While one may have achieved specialist status and the other has remained a G.P., they have retained mutual respect and friendship, and this is reflected in their professional relations. The same observation applies to Scotland.

In larger cities one would expect to find that at the periphery of the town, where there are large secondary hospitals, the relations between the practitioners in the area and the specialists on the hospital staff would be good; but I have not found this to be the case. Practitioners will often completely by-pass the local hospital (even when it has a good reputation and is well staffed) and send their patients longish distances to see the men they "know." The "knowing" may have been ten or twenty years ago, but loyalties and personal sentiment often seem to outweigh objective judgment. Circumstances such as this certainly do nothing to improve the liaison or relations between G.P. and specialist on a local basis.

Actually the rural G.P. often has more contact with specialists than his city colleagues do, because the specialists periodically visit the country hospitals.

I met one hospital superintendent who used to hold Sunday meetings for the G.P.s who worked in the area round his hospital. He claimed that the attendances and results were good, and knowing the man and his reputation I fully believe they were. A few others say they have tried the same thing, but the attendances and response of the G.P.s were so disappointing that the venture was dropped. Intermittent meetings of medical societies seem to be only as successful as the organising ability and leadership of the local chairman or secretary make them. The many G.P.s with whom I have talked demonstrate a fairly constant lack of interest in this sort of thing.

In brief, I find it hard to imagine any circumstances which would more effectively isolate the general practitioner from the specialists and the hospital services than the circumstances now prevailing in most of the areas I visited.

THE GENERAL PRACTITIONER AND LOCAL-AUTHORITY HEALTH SERVICES

In whatever region or district I worked, I made a point of seeing the medical officer of health, and, whenever possible, of talking with representatives of the various branches of local-authority services—doctors, midwives, nurses, and health visitors. I also saw some examples of their work. However, I was not making a study of local-authority services as such, and my attention was directed to the relationship of the local authority with the general practitioner.

In practical terms it is fair to say that such a relationship hardly exists. Often there is a mutual animosity and distrust. The idea that the local-authority services are complementary to the work of the G.P. is, in my opinion, theoretical; in fact these services are substitutes for some of the work which was once his responsibility but has long since passed from his hands.

The one possible exception to this rule is the home nursing service. The doctors are ready enough to use the nurse to give injections, to do dressings, to give enemas, and to perform other routine nursing tasks; but even so it is rather a one-way business. Except in country districts, I met very few doctors who knew their nurses or had anything to do with them beyond telephoning instructions for them to go to such and such an address and do this or that thing.

Before July 5, 1948, the midwifery and maternity and child-welfare services had in many areas relieved the G.P. of almost all responsibility for conducting confinements or taking an interest in the health and welfare of the normal mother and child. There is practically no two-way communication between the clinic and the practitioner. The clinic doctor or the midwife will inform the G.P. of any abnormalities they discover; but the practitioner seldom seems to give any information to them, or to trouble himself about what goes on at the clinics, even where his own patients are concerned.

More than once I have seen a mother come into the doctor's surgery carrying in her arms a baby three or four months old, and this was the first intimation he had ever had that the lady had so much as been pregnant.

So far as I can ascertain, efforts made to use the G.P. as a part-time worker in the maternity and child-welfare clinics have met with little success.

Some of these issues were highlighted when the Act came into operation. The uneasy equilibrium which had been established between the G.P. and the local authority was disturbed as soon as the question of certain remuneration for maternity services was raised. The doctors, who had yielded a large measure of responsibility to the midwives, now sought to re-establish themselves. They claimed that, as they were licensed to practise midwifery, they were therefore the right people to be responsible for confinements—though very many of them had not done obstetric work for years. The final compromise by which practitioners were reclassified into two classes—those worth £5 5*s*. and those worth £7 7*s*. per confinement—speaks for itself.

All the midwives, local-authority doctors, and consultant obstetricians with whom I have spoken expressed the hope that the G.P.s who are now booking midwifery cases will leave the actual work to the midwives and clinics. Many doctors are doing this, but at the same time these incidents have upset the midwives considerably, and, I am told, have had bad effects on midwife recruitment. Certainly they have not improved relations between doctor and local authority.

Many of the same remarks apply to the relationship of the G.P. and the school doctor; but unless financial issues intrude, as they have done in the midwifery services, the present equilibrium is unlikely to be disturbed.

To the average practitioner the health visitor seems to be an enigma. He regards her with something between suspicion and cynicism, and I have not heard of a G.P., on his own initiative, using the services of a health visitor. Admittedly health visitors are more than fully occupied meeting the demands of the tuberculous patients and "new" mothers; but this is not the reason for the doctor's lack of interest in them or for his not seeking their assistance.

I must repeat that the local-authority services, instead of complementing the work of the general practitioner, have in fact assumed almost complete responsibility for some of the work that was once his concern.

THE STATE OF GENERAL PRACTICE: A SUMMARY

1. General practice is a term without specific meaning or definition. There are three distinct patterns, which are determined principally by social environment. These are:

General practice in industrial areas.
General practice in urban-residential areas.
General practice in rural areas.

2. The three patterns have evolved from a common parent—the family doctor of last century. Their evolution has been largely a process of adaptation to the growth and development of other medical services, such as those provided by hospitals and specialists. This process has resulted in the decline rather than the progressive evolution of general practice, and in wide departure from both the idea and the ideal of family doctoring.

3. There are no objective standards for general practice and no recognised criteria by which such standards might be established.

4. The reputation of general practice has been maintained through a continued identification with the idea and ideal of family doctoring; but, except in certain circumstances, this reputation will no longer stand up to examination.

5. As a result of the process of adaptation, and the failure to establish and maintain standards, general practice is now worst in close proximity to large hospital and clinical centres and improves in both scope and quality almost in proportion to the distance away from those centres.

6. It follows that the worst elements of general practice are to be found in those places where there is the greatest and most urgent demand for good medical service—i.e., in areas of dense population.

7. The working conditions (surgeries and equipment, organisation and staffing) of many general practices are unsatisfactory. Some are bad enough to require condemnation in the public interest.

8. In some cases—particularly in industrial areas—the working conditions are so bad as to override the abilities and skills of the individual doctor. They tend to reduce the work of both good and bad doctors to a common level.

9. Many doctors have been isolated from hospital facilities and are now working under conditions which make useless much of their elaborate and expensive training, and negate the disciplines taught in hospital and medical school. Some conditions of general practice are bad enough to change a good doctor to a bad doctor within a very short time. These very bad conditions are to be found chiefly in industrial areas.

10. Rural practice represents the last outpost of real family doctoring, and in some respects it has gained more from modern medical knowledge and techniques than urban practice.

11. The over-all state of general practice is bad and still deteriorating. The deterioration will continue until such time as the province and function of the general practitioner is clearly defined, objective standards of practice are established, and steps are taken to see that these standards are attained and maintained.

III. GENERAL PRACTICE AND THE NATIONAL HEALTH SERVICE ACT

DIRECT IMPLICATIONS OF THE ACT

The National Health Service Act has made large and fundamental changes in both hospital and specialist services, and has considerably altered the medical responsibilities of local authorities. It has done little, in any direct or immediate way, to upset the status quo of general practice.

By extending National Health Insurance to cover 100% of the population, instead of the 40% previously covered, it has suddenly thrown a greater load (in terms of volume) on the existing structure of general practice, and by introducing new techniques for remunerating the doctors it has caused a redistribution of income within the profession. But neither of these things implies any basic or direct change in the nature of general practice.

THE GREATER LOAD

It is very difficult to assess the effects of the increased volume of work on any particular practice, or even its scale. It is certainly not possible to generalise about the over-all effects of this increase on the quality of medical care in Britain.

The weight of the patient-load depends, of course, not only on the number of patients registered with a doctor but also on the demands these patients make; and a great deal has been made of the increase in these demands since medical care became free to the patient. On this I have collected a lot of varied opinions, but very little in the way of actual data.

I tried to correlate what was happening in hospital outpatient departments with what was happening in general practice. I thought that hospital figures for periods before and after July 5, 1948, would provide some sort of index of what was going on in general practice. But the figures were not available, and to dig them out of hospital records would have been a long and formidable job. Absolute figures, not broken down into new and return patients and into the various branches of work, are of little value here; but, for what they are worth, those I did see indicated no significant increase in the volume of people attending outpatient departments, and this finding was usually supported by hospital superintendents, consultants, and resident staff.

Opinions collected from the same sources, when they seemed to be considered opinions, suggested that the medical character of the cases coming into outpatients had not materially altered since the beginning of the service. Considerable fuss was made about the time taken up in measuring people for appliances, but this seemed to be a matter of petty annoyance rather than serious grievance.

Opinions as to the increased demands on their time and effort since the beginning of the new service were also collected from all practitioners whom I visited. Almost without exception they said that, while they were seeing considerably more patients in the surgery (they estimated the increase at anything from 10 to 40%), their domiciliary work remained much as before. They generally agreed that in this regard the public were being very considerate, the chief complaint being of late requests to visit. Night work had not increased. Some doctors, indeed, expressed anxiety at the reluctance of patients to call them out in potentially serious cases, and one or two quoted examples of catastrophe narrowly averted.

Almost all spoke of the increased demands for spectacles, for appliances of various types, for drugs and dressings which the patient would previously have bought for himself without consulting the doctor, and for certificates. My own impression, based on all the practices I visited, was that so far as consumption of the doctor's time was concerned it was again a case of petty annoyance. The practitioners who complained most vigorously were usually those who took the line of least resistance and met almost all requests, without protest or discussion, and irrespective of the merits of the case. One doctor used to sign batches of forms certifying the need for ophthalmic tests, and put them on the waiting-room table for patients to help themselves. I saw very few who made any pretence of examining a patient's eyes, and I saw none make a physical or ophthalmoscopic examination before issuing a certificate for eye-testing. Requests for appliances of all types were usually dealt with by immediately issuing a note referring the patient to a hospital department where he could be fitted; I never saw a G.P. "waste" his time by carefully examining before referring.

This whole question of "patient abuse" is mostly a matter of speculation. The patient's reason for consulting a doctor is his own anxiety, which nobody else may be able to assess. Nevertheless the intensity of anxiety is largely governed by understanding of its causes, and the person with the most external control over it is the doctor.

Whenever a doctor has had a practice for any length of time, and has exercised a reasonable educational and disciplinary function, he is not a victim of patient abuse; the amount of this he suffers from is almost directly proportional to his laxity in these regards. It is interesting to contrast the current attitude of the doctors in Britain, where "patient demand" is probably now at its peak and where practitioners are beginning to appreciate the advantages of (even partial) emancipation from "patient blackmail," with that of the doctors in New Zealand, who have long since passed through this phase. I shall refer to this again in the appendix on New Zealand.

The demand for service is intimately tied up with the doctor's personal behaviour. I saw many practices where the doctor contended that the demand was very little greater than before July 5, 1948. I saw others where, though there had been little or no increase in the number of patients covered by the practice, the demand had increased so much that the quality of the work was suffering.

Apropos of this, I met a number of doctors, running practices which before the Act were mainly composed of panel patients, who were actively refusing to keep on the "good paying patients" of former days unless they would come on their N.H.S. list. The doctor's attitude was usually expressed something like this: "I didn't mind wasting my time with these people before the service started, but they're not worth it any more." Various inferences can be drawn from this, but they hardly need elaborating.

I met one practitioner who had had several years' hospital experience before going into general practice, enjoyed a considerable reputation in professional circles, and had many doctors' families on his list. The rest of his practice was 80% industrial and 20% "private," the private part being made up of school-teachers, clerical workers, skilled artisans, and the like. From July 5, 1948, he kept careful records of the demands for service that patients in the various groups made on him. In the first nine months of the new service the ratio of demand by members of doctors' families, "private" patients, and industrial patients was about 3 : 2 : 1.

Another doctor had built up a large partnership; commencing from humble origins in an industrial centre, he had finished up with a small and select practice of "good paying patients" in a high-class residential area. There were fewer than 2000 on his books and the financial returns were good. Soon after the introduction of the service, this man closed his practice and "retired" to the industrial part of the partnership, taking on a list of about 4000.

I cite these two cases to illustrate the difficulty of estimating, either in absolute or in comparative terms, the increase of work brought by the Act, or the doctor's reactions, private and expressed, to the new circumstances. The size of the doctor's list is not a good index of what is actually happening, though of course in the upper ranges (3500 and over), with conditions of practice as they are, there is no disputing that the load is grossly excessive.

The increased load, whatever its weight and nature, has clearly demonstrated points of basic weakness in the present structure of general practice. For these weaknesses the National Health Service Act is not responsible. Blame rests on the service only in so far as it has failed to provide the means of reinforcing general practice, so that it can take the new load.

REMUNERATION

I hesitate to enter the controversy on ways and means of remunerating the doctor. All sorts of extravagant statements have been made about the intrinsic evils of the capitation system of payment. The greatest tangible evil is the fact that it puts a premium on quantity rather than quality of work. It penalises the man with a small practice doing very good work, and it pays handsomely the man with a big list, however bad his work may be. But neither here nor in New Zealand have I seen any acceptable evidence that it operates to the detriment of the doctor-patient relationship.

It is too early to say whether the various devices, such as mileage-rates, special inducement payments, and basic salaries will successfully minimise or close the gap between quantitative and qualitative reward. In any case, we should recognise that the alteration in the method of payment has not altered the structure of general practice.

The desire of the doctor to relate the size of his income, and the manner in which it is received, to "patient benefit" has led to frightful confusion. It has complicated both political and professional issues and has obscured more fundamental considerations.

INTERFERENCE?

The establishment of executive councils as the bodies responsible for general-practitioner services could be the means of interfering with the manner of general practice or of limiting the doctor's autonomy. I found no evidence that the councils were operating in this way. All those I visited regarded their function as purely administrative.

I always asked the doctors I met or worked with whether there was any sign of interference with their clinical freedom. Only one claimed that there was, and he showed me a circular, sent out by his executive council, which said: "It is considered that all cases of ringworm of the scalp should be referred in the first instance to specialist skin clinics." This was signed by the clerk of the council. Almost certainly the suggestion, or "directive" as the doctor called it, had its genesis at a higher level than the executive council. The doctor objected not to the idea as such but to the way in which it had been put forward, and to the precedent set. He argued that if he could be told what he should do about ringworm of the scalp he could similarly be told about the rest of his work. I agree with him, and I was surprised that many other doctors I saw, who had received the same memorandum, did not draw attention to it. Probably many of them had not read it. However, this was the only instance of direct clinical interference that any doctor gave me.

The chief direct implication of the Act for general practice lies in the provision made for developing health centres. But this is a matter for the future rather than the immediate present, and I shall consider it separately.

INDIRECT IMPLICATIONS OF THE ACT

The changes just considered are responsible for many of the teething troubles of the new service. It may be hoped that time and experience will provide remedies. But while there is little doubt that the present emotional tensions will subside fairly quickly, there is no assurance—indeed no real hope—that sound solutions will be found for these problems unless a great deal of thinking and a good deal of fact-finding is undertaken.

For the future of general practice the indirect implications of the Act are much more important than the direct ones, and chief among them is the new emphasis given to hospital and specialist services.

I have already given my opinion that :

1. The G.P. surgeon is the chief target in what I term the "attack" on general practice, and there is a tendency to extend the case against him into other provinces of the G.P.'s activity.
2. Up to the present, the development of hospital and specialist services, far from assisting the G.P. to do better work, has depressed both the scope and quality of his work.

I am not suggesting that it is impossible to increase both the amount and scope of hospital and specialist services and simultaneously to upgrade the G.P. ; but there is no sign that the new service is going to bring about this desirable end. On the contrary, there is some indication that it is worsening the present unsatisfactory state of affairs.

As at present conducted, the upgrading of the smaller hospital units implies exclusion of general practitioners from the staff ; it further implies the employment of many junior specialists, often with no experience of general practice ; and it closes the already half-shut door on the G.P.'s chance of entrance into the realm of the specialist. I have just been told of two hospitals upgraded in this way, with exclusion of the G.P. obstetricians of the area. The reason advanced for such exclusion is of course that the G.P. is not the proper person to do midwifery ; and similar arguments are brought against the G.P. surgeon, the G.P. E.N.T. man, the G.P. anæsthetist, and in fact any G.P. who shows a particular interest, and attempts to develop a particular skill, in almost any branch of medicine. So long as the general practitioner's province and function is undefined, he is in no position to defend himself against those who would constrict it further.

I met a number of G.P.s, of long experience and real ability, with well-established practices, who had sons either in medical school or recently graduated. These men told me that they had planned to retire relatively early and allow their sons to succeed to the practice ; but they had now given up these ideas and were encouraging their boys to seek a different kind of life in one of the specialties. They were moved to this decision not by financial dissatisfaction or fears of bureaucratic controls, but because they foresaw limitation of the scope of the G.P.'s work and responsibility.

CHILDREN

Compared with the other specialties, which concern themselves only with anatomical or physiological parts of the body, the newer specialties of pædiatrics and geriatrics bite more deeply into general practice, because they assume responsibility for whole age-groups of society.

Pædiatrics, the longer and more firmly established of the two, has gained much ground in recent years. As a new and socially conscious group, the pædiatricians have made valuable contributions to both the medical and the social welfare of children, and in a lesser degree to that of mothers. But, unlike most other specialists, the pædiatrician does not confine himself to the more difficult parts of his subject. In fact nothing seems to be too menial for him. Child health, infant feeding, and minor ailments, in which the G.P. has shown a conspicuous lack of interest, have captured the pædiatrician's imagination and have all been drawn into his net. Apart from the obstetrician, he is probably the only practising doctor who can claim to have an active interest in preventive medicine.

No-one would argue that there is no place for pædiatrics, but it is a moot point whether the pædiatrician should take so much of the responsibility for the general medical care of a whole age-group, thus further fractionating the continuity of care and relieving the G.P. of yet another part of his duties. I have observed the work in several pædiatric clinics and have been struck by the large proportion of the specialist's time which is taken up with minor matters which a good G.P. should be fully capable of handling. I would estimate these minor cases at something like 50% of those I saw passing through the clinics. In New Zealand, for example, where midwifery and what one may call the lower strata of pædiatrics form the very basis of general practice, these 50% would never get near a clinic or a specialist pædiatrician, and it is my firm opinion that the mothers and children are better off because of this.

Often I was struck by the anxiety caused to the mother by a clinic visit—I refer here to hospital outpatient clinics, not to local-authority maternity and child-welfare clinics—and also by the failure of the pædiatrician either to appreciate this anxiety or to give time to allaying it. When working in G.P.s' surgeries I was similarly impressed by the obvious anxiety caused by the suggestion of a visit to the hospital pædiatrician, and even more by the anxious state of some of the mothers returning from such visits. Usually this anxiety seemed to be accepted by the doctor as a normal part of the procedure ; and again little was done to allay it.

This problem of the creation or fixation of anxiety is not peculiar to pædiatrics. I think I hardly ever sat through a consulting hour without witnessing a case where anxiety had either been created or intensified by a visit to a hospital outpatient department. For this if no other reason, the aim of any good medical service should be the minimum use of hospital outpatient departments compatible with good medical care. Yet the trend seems to be in the opposite direction.

I visited one sick children's hospital where, though the bed capacity had not changed for ten years, the medical staff had increased by 300%, and the vast majority of these doctors were engaged on routine and not research work. I also worked with some of the G.P.s in the environs of this hospital. The best of these could obviously have handled capably many of the problems which they referred almost automatically to the pædiatrician. When asked about specific cases they had referred and the reasons for referral, the answer was always the same : "The pædiatrician is there to be used. Why should we assume the responsibility for the children ? "

Thus the mere existence of the pædiatrician impels even the good G.P. to use his services. If the existing demand for pædiatricians is going to be taken as a measure of the real need for them, the figure reached is certainly going to be excessive, and ultimately the general practitioner, in towns, will be relieved of all responsibility for the care of children.

OLD PEOPLE

The position as regards geriatrics is somewhat different, though some of the same considerations apply. The problem of long-term illness in an ageing population has become very important. The G.P.'s attitude and attention to what he calls his "old chronics" is well known and has been mentioned already.

But is it certain that this problem will be best solved by having a new team of specialists, the geriatricians, and much more institutional care ? At present, because of the indifference of the G.P. to the illness of old age, it looks superficially as though geriatric units and more geriatricians are the logical, if not the only, solution. Further force is given to this argument when one considers the way in which "chronics" have been dumped on general hospitals and have lingered there indefinitely, occupying beds needed for acute illness and putting up maintenance costs.

I studied the situation in a county where the population is ageing rapidly because the young people have been drifting to the cities. Environmental conditions,

as represented by housing and possibly nutrition, were relatively good in this area, and there was an excellent geriatric hospital surrounded by rural practitioners, who in my estimation are the best type of G.P.s. But I was unimpressed by the attention given to the old people of the community. Working with doctors within a few miles of the geriatric hospital, I found that they knew little or nothing of its work. The contrast between the handling of a case (say a paraplegic, an arthritic, or a cardiac failure) by the G.P. and by the people in the hospital was most striking.

At first, therefore, one was inclined to say that here, in the specialised hospital, was the answer to many of the problems of old age. But on reflection it was evident that much of the benefit obtainable there could be obtained at home if only the general practitioner would exercise his medical skills on his old patients. The efforts of the hospital to convey this to the practitioners of the area had met with little success.

The important point is that, if geriatric units could be used as an instrument for educating the G.P., and if the emphasis could be put on G.P. home care rather than on specialist-hospital care, the present perspective would appreciably change, and we should need to reconsider our ideas on hospital development for the care of old people. That this could in fact be done is in my opinion beyond question; but the work of the units would need to be oriented in this direction. Failing such action, it is almost inevitable that the success now being achieved in geriatric units will sooner or later receive the recognition it so well deserves and will set an institutional pattern for the care of the "chronic" and aged sick.

THE THREAT TO GENERAL PRACTICE

The socially conscious attitude of the pædiatricians, and latterly the geriatricians, when contrasted with the usual attitude of other branches of curative medicine, has justified their claims to work which normally would not be thought to require specialists. While this socially conscious attitude of mind is to be applauded, the consequences of making new specialties on the basis of whole age-groups of society should be watched very closely.

The current growth of pædiatrics and geriatrics represents another attempt to compensate for deficiencies in general practice in terms of more specialist and hospital care. This trend has been going on for a long time; but if it continues it is bound to result in over-compensation, unnecessary expense, further dehumanising of medical care, and ultimately the elimination of the general practitioner as a responsible person.

The greatest single threat to the future of general practice is the gap between the general practitioner and the specialist. This gap has been widened by the impetus given by the Act to hospital development, and the simultaneous neglect of general practice as an issue of policy.

ADMINISTRATIVE AUTHORITIES AND THEIR RELATION TO GENERAL PRACTICE

THE REGIONAL HOSPITAL BOARD

At this early stage in the history of the new service it is easy to be too critical of deficiencies and weaknesses, many of which are unavoidable and will be ironed out. It is equally easy to be too tolerant and to overlook major faults which might be corrected now but which otherwise will soon be firmly fixed.

The establishment of regional hospital boards, and the granting of the powers vested in them, is probably the most revolutionary feature of the whole Act. The difficulties of staffing these boards and the various committees and subcommittees which work under them, the difficulties of reaching a satisfactory compromise between central and peripheral control, and all the problems which arise from the assumption of new powers by new people strange to them, call for tolerance in comment and patience while early mistakes are overcome.

But the failure to provide a link between the regional hospital boards (responsible for hospital and specialist services) and the executive councils (responsible for general-practitioner services) cannot be classified as an initial or experimental error, and the lack of such a link must be regarded as a primary and serious defect in the structure of the service. The idea that members common to the two kinds of body might form the necessary liaison is not supported by the happenings to date.

The responsibility for this state of affairs rests mainly with the executive councils and others connected with general-practice policy who could take the initiative in defining the rôle of general practice in an integrated medical service. But it is hard to see how the regional hospital people can do their job properly unless they too interest themselves in this fundamental issue. Unfortunately none of the hospital-board members or executives I interviewed showed either a particular interest in, or understanding of, the problems or significance of general practice. They seemed to regard administration of hospital and specialist services as a separate task not concerning, or concerned with, the general practitioner. I do not know of any hospital board which has asked either an executive council or any other body for a statement of policy on general practice; nor do I know of such a statement being drawn up and tendered spontaneously.

Thus hospital and specialist requirements are being worked out with no real regard to the present state, or the future development, of general practice. I saw a good example of this when I visited two hospitals, of similar size and type, which had been included in a previous hospital survey and had lately been assessed for staff and equipment. One of them worked in association with a long-established group practice and the other in association with a number of doctors working independently. The work that was being done by the group completely altered the requirements of the first of these hospitals; yet nobody official had ever visited the group or taken any account of the things that were being done, or could be done, by it. Even in situations like this, where the whole history and development of the hospital had been in the hands of the general practitioner, the future of the hospital now seems to be considered as something apart from him. This is an extension of the attitude which has prevailed in larger hospitals for a long time—i.e., that the general practitioner has no place in hospital work and therefore merits no direct consideration in hospital planning and development.

The senior administrative medical officers hold, at least for the time being, the key position in the activities of the hospital boards. All those I met were either ex-public-health men or ex-members of the staff of the Ministry of Health. From the standpoint of administration this is probably the best background they could have; but from the point of view of medical-care policy, particularly general-practitioner services, it is probably the worst.

Whenever general practice came up for discussion, they drew attention to the surgical crimes of the G.P. working in a cottage hospital. Most of them expressed their determination to eliminate the G.P. surgeon. This seemed to be their focal point for thinking about general practice. Their attitude to the problems presented by industrial practice was one of resignation to the inevitability of that sort of thing, of hopelessness of doing anything about it at its source, and of consequent acceptance of the need to compensate for it through the agency of hospital and specialist services.

Incidentally, as an outsider, I was struck by the paucity of field work being done by the regional hospital boards. Shortage of staff no doubt limits what is possible, but the result is that many important decisions have to be taken in committee and founded on opinion instead of on investigation. I was also impressed by the tenuousness of coördination between the regional boards and central authority at the Ministry of Health.

For all practical purposes it must be concluded that at the policy level there is no coördination between the regional hospital boards and the people responsible for general-practitioner services.

LOCAL AUTHORITY

The relationship, or rather the lack of relationship, of the individual general practitioner with the local-authority services has already been discussed.

On the introduction of the Act the local health authority, while losing control over municipal hospitals, gained new powers with regard to general practice, in that it was given the responsibility for health-centre development. Except in terms of politics it is hard to see why this responsibility for health centres was vested in local government while responsibility for general-practitioner services was given to executive councils. The failure of all parties interested in the new service to define what they meant by a health centre, and the general acceptance that it had to do with health and therefore preventive medicine, which in turn is identifiable with local-authority services and not with general practice, no doubt made it plausible to hand the responsibility to the local authorities. In Scotland, where a more realistic view was taken and the political complications were less, the Department of Health retained central responsibility for health centres, and the possibilities of fairly rapid and sound development are therefore better than they are in England.

It is natural enough that the local health authorities, having these powers with regard to health centres, should think first of all about their own services and only secondarily about medical care and the general practitioner. It is *not* natural that the G.P., who expressed real concern about health centres at the time of negotiations before July 5, 1948, and who now thinks he has been let down badly over them, and the executive councils, which reputedly look after general-practitioner services, should be taking no active interest in the efforts of local authorities or in the possible alternatives.

The fact that executive councils are confining themselves to administration makes this state of affairs more understandable; but even that does not explain the failure of local authorities to take the initiative and "tie up" with those responsible for general-practitioner services.

The local medical committees similarly show no active interest in the health-centre question. They are interested in a passive way, but they seem to have accepted the edict of "no steel, and houses before health centres" as an absolute reason for doing nothing now.

I could find no evidence that the new responsibilities of local authorities had brought them into any close coöperation or connection with the G.P. Indeed, the construction which is being put on health centres as bigger and better local-authority services, with some secondary consideration for the general practitioner, is widening the breach. The fact that a medical officer of health or a local-authority doctor sits on an executive council, or even on a local medical committee, does not seem to make any difference to the over-all relationship.

Twice I met medical officers of health whose interest was as much in medical care as in problems of public health. Both these men were trying to interest G.P.s individually, and the responsible authorities, in health centres oriented mainly towards the requirements of general practice. They seemed to be having little success; but in both places the general relationship of the G.P.s with the local-authority services was better than I saw elsewhere.

EXECUTIVE COUNCILS

Executive councils sometimes deal in terms of policy with exigencies which crop up from time to time, but never with broad general issues. The local medical committees run a parallel course and seem to be wholly preoccupied with day-to-day affairs. There are any number of these, as can be expected in the early days of a new service, and everyone can plead lack of time to deliberate on underlying principles.

The permanent staff of most of the executive councils have been inherited from the old insurance committees of National Health Insurance, and while they are doubtless very competent to deal with the machinery of the insurance scheme, most of them seem to be well out of their depth when it comes to other matters concerning general practice. This reduces the likelihood of executive councils doing anything more than the most routine kind of job; and yet they are the only official body directly responsible for general-practitioner services.

THE DOCTOR'S ATTITUDE TO CURRENT PROBLEMS OF GENERAL PRACTICE

The British Medical Association has expressed the official attitude of doctors to the National Health Service. Just how far this attitude of organised medicine in Britain represents the summation of individual opinion is open to question. From my contacts with a large number of doctors—some approving the official attitude; some disapproving it; but mostly "ordinary" doctors, asking no more than to be allowed to get on with their job as they see it—I was unable to correlate the thoughtful opinions of the majority with the statements of the organisation which represents them.

It is perhaps significant that these thoughtful opinions rarely find their way into the channels of public communication. This does not imply that any censorship is exercised over them; but they remain unexpressed through the inertia of those who hold them, through a sense of modesty, or through a feeling of the futility of individual effort in issues as vast as this.

So far as general practitioners are concerned, I believe that a feeling of futility and insecurity, more than anything else, has prevented their expressing opinion on policy. Because of this, I am sure we are missing a wealth of experience and wisdom which would be available if general practitioners were given the necessary encouragement and opportunity to put forward their views.

As things stand, general practitioners are having little share in determining their own destiny or professional future, and this is leading to a demoralisation which can only accelerate the decline and fall of general practice.

In the course of this study I sought opinion from men long established in practice and from young men trying to enter it or make their way in it. The same sense of hopelessness pervaded both generations. Some of the best family doctors whom I met were actively discouraging their sons and daughters from succeeding them in general practice: as I have already explained, they believed that the eclipse of general practice is at hand—that it is to be supplanted by more and more institutional and specialist medicine.

It is noteworthy that even these fine family doctors, who for years have acted as family counsellors as well as ministering to the organic needs of their patients, give priority of interest to the organic aspects of their work. The reason for this, I feel sure, is that, within our cultural pattern, the doctor's ability to establish rapport with his patient, and thus place himself in a position to

cope with psychological problems, rests largely on his ability to handle physical disease—not only the minor physical disorder but also, to a great extent, the major one. This dates from the time when patients had to rely on the family doctor for almost every kind of medical care; for many people still suppose that he carries this great burden of responsibility—which he rarely does. I have actually met doctors who believe that they must do a certain amount of major surgery or lose the respect or "faith" of their patients; and this is undoubtedly true in some degree.

While the doctors' attitude in this regard could probably be altered fairly rapidly by a reorientation of medical education, the corresponding change in the cultural pattern would probably take generations rather than merely years.

THE CONTRACTING SPHERE

This brings us back to the question of how much responsibility for medical care can be safely centred in one person.

I have drawn attention to the efforts to control the excesses of the general practitioner in surgery, and to the extension of similar empirical control (or limitation) to other parts of his work. Now, looking at the non-organic side of his activities, it is very obvious, in the light of modern psychological and psychiatric knowledge, that it is potentially dangerous to have a "half-trained" doctor handling psychological problems. Yet we are faced with a situation where he does handle them; and moreover one where—the cultural pattern being what it is—the patient accepts the ministrations of the general practitioner as orthodox, whereas he would be suspicious of the "modern heresies" of the psychologist, the psychiatrist, the psychiatric social worker, and the home visitor. So long as this is so, we cannot afford to reject the G.P. by over-curtailment of his responsibility for organic medicine, or to force the new heresies on the public in obedience to the dictates of organic statistics on the one hand and modern psychological theory on the other. The present trend towards institutional and specialist care is in fact a rejection of the general practitioner, an assault on our cultural patterns, and perhaps an indirect admission of inability to resurrect all that is good in general practice and turn it from an anachronism into a contemporary and inestimably valuable service.

Though the behaviour of the doctors I have mentioned was founded on these considerations, they did not express themselves in these words. Some saw the decline of general practice in terms only of a growing contraction of their sphere of activity in the realm of organic medicine: they resented, for example, the threat to their positions on the staff of cottage hospitals. In fact, while the consensus of opinion was that general practice is doomed, they very seldom volunteered a cogent analysis of why this is so, or what ought to be done about it. Nevertheless, once given encouragement and some sort of a lead, these same doctors, from their large personal experience, talked about general practice in a critical and constructive manner which is not often reflected in official or public utterance.

I think it highly significant that good established general practitioners should be advising the younger generation to stay out of this field, so long before their fears may become reality. It is even more significant, in view of what is said by their representatives, that none of the doctors I met expressed serious discouragement in terms of the evils of the capitation system of payment or of the bureaucratic tyrannies which are supposed to characterise the new service.

The foregoing is not an argument for stopping experiment with different kinds of medical care; nor is it a reactionary appeal on my part to retard progress in bringing modern medical knowledge and technique to those who need it. It is, however, an appeal not to throw away what is good in general practice, and relegate this part of medical care to the scrap-heap, but rather to use, reinforce, and bring up to date these good elements. General practice as we know it could, if we wished, be converted into general practice as we like to imagine it; and if this is to be our aim we must not rush too far ahead with the development of our so-called public-health services and specialist services, which are largely attempts to patch up obvious weaknesses in the provision of medical care. It is time that the cause of the weakness, rather than the symptom, received attention.

METHOD OF REMUNERATION

On the highly controversial issue of the capitation system of remuneration I found, as I have said, much less strong feeling than I had been led to expect. Those doctors who had big lists were as well off as previously, or even better off; and no serious complaints were made by this group. I met a few doctors who had previously had a small high-fee-paying clientele and who had been badly hit by the Act—particularly in urban areas where mileage-rates and special inducement payments did not function as a means of subsidy. Rural practitioners, it was argued, would fare worst; yet those with whom I came in contact were relatively unperturbed about either the method of remuneration or the size of the capitation fee. Indeed I found few doctors claiming that the different manner of remuneration had materially altered their way of practice. The few who spoke strongly about patient abuse and disturbance of doctor-patient relations since July, 1948, failed to support their statements to my satisfaction; and in most cases where such statements were made there was evidence of poorly organised and badly disciplined practice which seemed to be of more than twelve months' standing.

The attitude of some of these doctors to the various social and economic groups among their patients was interesting. Especially in the latter months of my study, I noted a growing resentment against those social groups which used to form the paying part of a given practice, with a developing interest in, and attention to, what was once the "panel" part (or its equivalent). This went deeper than a mere objection to the well-to-do patient wanting the benefits of the National Health Service. It arose chiefly from the demands of this social group for more time and attention than their less fortunate neighbours are accustomed to receive, and it was increased by the tendency of better-educated patients to question diagnosis or therapy, to seek reasons for statements and instructions, or even to challenge the doctor's edict.

One subject which cropped up continually in my talks with all manner of general practitioners was that of salaried practice: the hypothetical and real dangers of such a system, and the possibility that it would be the final outcome of the capitation service, were often discussed. I met many doctors who thought that, given reasonable guarantees of autonomy, a salaried service would be preferable to the capitation service. (Of course, emphasis was laid on the need for autonomy.) On this issue, as well as others, I found the thoughtful doctor, both in individual and group discussion, embarrassed when he was identified with the official professional attitude.

ACCEPTANCE OF BAD CONDITIONS

But my attempts to get individual doctors or groups of doctors to appraise the more basic conditions of their work met with little success. The traditional pattern of general practice—i.e., one man doing all his work in a single room with such equipment as he deems necessary

or can afford—is firmly established and readily accepted as being, if not "the best of all possible worlds," at least the best attainable for the time being. The doctor who worked in an unattractive surgery almost always criticised it from the point of view of his own and his patient's comfort, but very seldom from a functional point of view. The doctor with a nicely appointed surgery, though this was functionally little or no better than the other, usually had no criticism to offer, and often took pride in an establishment which, as regards ease and efficiency of work, was indeed very bad.

This limited outlook on general practice, by the general practitioner himself, is quite as important a factor in retarding health-centre development as is his expressed disinclination to sink his individuality or independence in the coöperative effort of a group. The one bright spot in this otherwise gloomy sky is the fact that, once shown possibilities beyond the present narrow and ever-narrowing limits of general practice, he exhibits a latent enthusiasm, and often a breadth of vision, not to be suspected from his normal conduct and attitudes.

The lack of critical faculty among doctors is curious. A well-trained man will throw over the hard-won disciplines of clinical training, and accept the stultifying limitations of general practice within its present concepts; a really good doctor will divide his working time between a well-equipped, well-run cottage hospital, and a poorly equipped, badly run surgery, without apparently noticing his changing environments of work. Such acceptance of bad conditions has a deadening effect.

REFRESHER COURSES

Efforts have long been made to help the general practitioner to keep abreast of modern knowledge and technique, and to encourage him to maintain standards of work. The so-called refresher courses have been the means mainly used for doing this, and there is much discussion about providing more of them and about ways of freeing the doctor from duty so that he may attend them. But many of the more thoughtful practitioners are sceptical about their value. My own opinion is that, with conditions of practice as they are, these refresher courses do the general practitioner about as much good as an injection of adrenaline does a patient with terminal heart-failure.

AID FROM SPECIALISTS

The attitude of the general practitioner to the specialist naturally varies from doctor to doctor and from circumstance to circumstance; but several points about it need to be noted. At the higher levels of work, exemplified by advanced surgery or medicine as practised in large hospitals, the respect of the G.P. for the good specialist is absolute and unqualified. But at the lower levels of work, as represented by domiciliary and some aspects of outpatient consultations, he does not show the same confidence. And it is at the domiciliary level that practitioner and specialist have most contact.

The line of demarcation between the patient who can be treated at home and the patient who requires hospital care is fairly clear so far as acute diseases are concerned. Hence the general practitioner rarely wants what one may call an emergency domiciliary consultation—his view being that anything as serious as this is not a matter to be debated in the bedroom. It is chiefly in the case of long-term or chronic illness, where there is no clear line of demarcation, that he needs the specialist's help in the homes of his patients. But as, on the whole, both G.P. and specialist lack interest in the chronic medical diseases, particularly those of old age, the demand for domiciliary consultation is not very great.

Thus the good general practitioners whom I met made little use of, and felt little need for, specialist assistance in the home. Many of them said that they have no more than three or four such consultations in a working year, and sometimes not that; and in retrospect they doubted the need for even these few. The specialists whom they called in could not help them much, they thought, with illness in old age. Indeed, so far as these good general practitioners are concerned, the chief reason for calling a consultant is to relieve the anxiety of relatives or the patient; they seldom expect any help for him physically. Such practitioners have made little or no more use of domiciliary consultation since the Act made it generally available.

One good practitioner with whom I worked used the domiciliary consultation for purposes of personal tuition: he collected a number of interesting cases and then arranged for one or more specialists to see them and discuss them with him on some suitable afternoon. While such an arrangement carries obvious benefit to both G.P. and specialist (and probably to the patient), it is perhaps an unnecessarily expensive mode of instruction, and something of an abuse of the system.

In the whole course of my study I did not attend any domiciliary consultations, and I had difficulty in ascertaining how this service is being used. Some practitioners spoke of checking their therapy in chronic or long-term cases (particularly cardiac); but they added that in fact they got very little useful assistance from the specialists. A few expressed satisfaction at being able to call in a specialist in cases involving children—particularly an otologist in cases of otitis media and possible mastoid. But I think the object of the consultation, as they saw it, was to relieve the parents' anxiety as much as to confirm their own opinion.

The relief of genuine anxiety in the patient or his relatives is certainly a very good reason for a domiciliary consultation; but I doubt whether this was the purpose for which the service was provided. The point that impressed me most was that the really good G.P. had, or believed he had, little need to call the specialist to the home, and little (or infrequent) desire to do so. On the other hand, the G.P. of lesser quality could legitimately call in specialists much more often than they were really needed.

On three occasions I met general practitioners who, in all good faith, were calling in young consultants in order to help them financially and get them established. This kindly personal gesture was, of course, billed back to the taxpayer. There was never any question of dichotomy.

From my observations and questions I can only conclude that the good doctor felt little need for specialist assistance in his everyday work as at present constituted, and had little faith in the specialist's ability to do more than he could himself. The less good general practitioner, if self-assured, took the same line as his more competent colleagues; if not self-assured, he used the specialist to compensate for his own weakness.

With general practice as it is today, there is little likelihood of domiciliary consultation being applied properly: indeed until the province and function of general practice has been determined, and real standards have been established, it is useless to speculate on the proper relations between the specialist and the general practitioner in domiciliary work. Both in money and in time, domiciliary consultation is a very expensive means of compensating for weaknesses in general practice; and in present circumstances it is a very dubious means of trying to correct these weaknesses at their source. Perhaps the greatest benefit is to the specialist, who is brought out of his world of institutional medicine and into the world of his patient.

THE PRESENT AND THE FUTURE

In general, I found the attitude of the established practitioner to the new health service only a pale reflection of the vehement stand taken by organised medicine on

his behalf. His views have been severely limited by the political and emotional considerations which have governed professional policy since the Act was first mooted, and in another way even more severely limited by the deeply rooted traditions of the British "family doctor." But I found that whenever these considerations could be temporarily laid aside, and he could be induced to think critically, he had a valuable contribution to make to the whole field of thought on medical care.

The attitude of the young doctor to general practice is of special importance for the future. Medical education at present tends to direct the student away from general practice, and it is certainly not designed to equip him fully for this type of work. Before the introduction of the Act, economic and social pressures obliged a large proportion of medical students to accept general practice as the easiest way to a reasonable livelihood within a reasonable period of time. Nobody would suggest that this was a good means of recruiting general practitioners, but at least it was a means. Today, however, the National Health Service Act has lessened the economic pressure which previously kept some people out of the specialties, and has added few if any inducements for the young doctor to go into general practice. Over and above this, it has put new obstacles in his way.

Even in the hypothetical under-doctored areas, of which the Medical Practices Committee has published long lists, vacancies by death and retirement are few; and sometimes the circumstances in which they have been filled have been such as to discourage candidates from trying again. At the moment the one easy way into general practice is to secure an assistantship in a busy urban practice with the possibility of later partnership. But in the circumstances prevailing in this type of practice it is a shame to see potentially good doctors entering through this channel, since their chances of improving the bad conditions to which they are going are very slim, while the chances of their own retrogression are very great.

The attraction of an apprentice appointment with an approved established practitioner is not really very strong, and so far few such appointments have been made.

The very few young doctors I met who had entered general practice at or about the time the Act came into force were in difficult circumstances and looking for a way out. In section II I described the case of a very able young practitioner who, because he tried to exercise a wide range of medical skills, was regarded as a professional oddity, and who was facing financial disaster because of the limited nature (volumetrically) of his practice. He is perhaps an extreme example, but still an example, of the difficulties and the discouragement which confront anyone with a genuine interest in this type of work. Another illustration is provided by a doctor in a large city where one would imagine that establishment in practice was much easier. He had a senior qualification (M.R.C.P.) and a very strong desire to make his career in general practice. At the time I saw him and witnessed his quite superior work he had been in practice for about eighteen months. He then had some 800 patients on his list, a considerable overdraft at the bank, and a family to support. He had set his own deadline at 1500 patients on his panel by early 1950, failing which he would retreat from general practice into some form of specialist work which offered an assured future and less financial worry.

To the young doctor, as to the old, the promise of health centres as at present conceived is almost meaningless, though to the young perhaps it is not quite the same bogy. The new ideal certainly does not permeate back into the years of undergraduate training, and it is unlikely to have any appreciable effect on recruitment to general practice in the foreseeable future. And it is these foreseeable years ahead which are going to determine the patterns, quality, and nature of medical care for a long time to come.

I cannot report that I found any more spontaneous constructive criticism of general practice among young doctors than among old. Unless they are given a lead, it is useless to look to the latest generation to advance the field of general practice in any radical or fruitful way. They are as closely bound by tradition and the status quo as the generations preceding them; and, though they may resent the present nature of general practice, they tend either to accept it philosophically or to escape into other branches of medicine.

Nevertheless, I found many significant inconsistencies between the opinions of a large number of individual doctors and their opinion as represented by the spokesmen of the profession. More important, I found that, given encouragement, these same doctors, who apparently had nothing more to say than has been said officially, were ready to make a contribution to the planning of both their own future and the future of the medical service as a whole. It is to be hoped that they will be given the opportunity.

HEALTH CENTRES

Both before and after the introduction of the National Health Service, the promise of health centres represented the chief hope of the general practitioners for a "new deal." But though there was much talk about health centres for the future, this future has since been defined as the time when we have more steel, more building materials, more labour, and more money. Many practitioners now regard the promise of health centres as a political trick, designed to gain their support at the time of the negotiations, or at least as an unfulfilled promise whose fulfilment is now unlikely. There are still the optimists who see the health centre as the panacea for all the disorders of general practice; but few of this group can explain what they mean by a health centre, much less show the way to translate it into reality.

Apart from recent deliberative work by the Health Centre Committee of the Central Health Services Council, the only positive steps towards development of health centres have been taken by local authorities. This is natural in so far as responsibility for health centres has been vested in local government; but it has led to an interpretation of the health centre primarily as a large building in which to house the personal preventive health services—maternity and child welfare, health visiting, school medicine, &c.—with only secondary and small consideration for the work of the general practitioner.

Whatever the value of such a health centre may be, it will do little or nothing to improve the standards of general practice. Moreover, general practitioners may refuse to work in a centre of this kind. The vast majority of them are prejudiced against, and suspicious of, local-authority services, even at their present level of development, and for this if no other reason few doctors already established in practice will want to submerge their independence and individuality, as they see it, in the larger machinery of new local-authority health centres. Also there are more material objections—notably the benefits of tax allowances while they remain in their own surgeries.

Many local authorities have been very active in planning health centres, and have committed large and expensive schemes to paper. Perhaps fortunately, however, the great majority have been deterred by shortage of money and materials from proceeding at once with their projects. While they are held up there is time to think again about health centres and to define and design some functional units which might set the course for a better comprehensive medical service.

WHAT KIND OF MEDICAL CARE?

The health centre is merely a mechanism, a means to an end and not an end in itself; and unless we can define the end we may as well forget about the means.

If I am correct in setting down the three determining factors of the quality of general medical care as

1. The general social environment
2. The doctor as an individual
3. The immediate environment in which the doctor works

and in claiming that (3) is the only immediate variable and one which can greatly influence (2), then health centres can become the chief factor in raising the quality of general medical care.

As these three factors are by no means constant, there can be no absolute definition of a health centre: the needs of different environments will have to be met in very different ways. Nevertheless it should be possible to establish some criteria for what one might call a theoretical optimum health centre, and then to adapt this to different places and conditions. If we are to do this, we must clear our minds of two ideas:

1. That general practice, as it exists at present, is good or even good enough to meet the needs of any community.
2. That health centres are concerned primarily with preventive medicine as we recognise it at present.

We must then reverse our thinking on hospital and specialist services (medical and ancillary): instead of considering how far we can build these up, we must consider how far we can dispense with them. For both human and economic reasons, we should work from two premises:

1. That as many people as possible should be kept *out* of hospitals—whether as inpatients or as outpatients.
2. That the medical care of the patient should be integrated, not fractionated.

On this basis the optimum health centre must be, first and foremost, a high-grade diagnostic and therapeutic centre; which implies good (if necessary elaborate) equipment and all the people necessary to use it. Continuity of responsibility for medical care of a patient cannot be achieved unless the general practitioner assumes high-level responsibility in a wide range of activities. It is true that there is virtually nothing in his work which some specialist cannot in theory do better; but we must firmly resist the conclusion that therefore we must keep on fractionating and specialising.

Admittedly, general practitioners working with limited equipment and in isolation can easily become dangerous through taking on too much responsibility, but in a health centre well staffed and well equipped it should be possible to minimise such dangers and ascertain by experiment the level of responsibility which suits practitioner and patient best.

APPLYING THE PRINCIPLES

There are very few places in England where the establishment of an "optimum" health centre is possible: except perhaps in rapidly expanding towns, medical services cannot be planned entirely afresh. So we must think mainly in terms of adaptations of the "optimum" which will fit in with the services already provided by the general practitioner, the hospital, and the local authority.

Our object will be to change the working environment of the G.P. and make it possible for him to do better work and to retain, instead of discarding, the good disciplines of medical school and hospital. If this one thing can be done, a lot of other difficulties should be overcome with relative ease. The schism between hospital-specialist and G.P. services will narrow rapidly instead of widening as at present, and the relationship—or rather the balance of power—between local-authority services and general practice should improve.

Though, in my opinion, it is impossible to draw up a blueprint for a widely applicable prototype health centre, we can set down some indispensable requisites—namely

1. Separate and private units for consultation and examination by each doctor working in the centre.
2. Adequate personal equipment for each doctor.
3. Such nursing staff as is needed to relieve the doctor of unnecessary and time-consuming duties.
4. Such clerical staff and office equipment as are needed for proper organisation, running, and record-keeping.

To these, various additions (differing in different circumstances) will be necessary. For example

1. Laboratory facilities and technicians.
2. Radiological facilities and technicians.
3. Physiotherapeutic facilities and physiotherapists.
4. Rooms for visiting specialists or consultants.

To this medical-care nucleus can be added offices for local-authority services and personnel, and for such welfare functions as may be considered desirable in given circumstances.

In the present situation, both medical and economic, priorities of attention must be allotted. Number 1 priority should go to general practice and not (as now) to local-authority services, and it should go to the worst part of general practice—i.e., general practice in dense urban areas.

In these industrial areas, where the level of general practice is low and where hospital and local-authority services are highly developed, it is unrealistic to think in terms of elaborate health centres. It is equally unrealistic to set out to duplicate an already existing service: for example, in a health centre adjacent to a large hospital unit it would be silly to have expensive diagnostic equipment. Nevertheless the health centre will fail in its purpose unless the necessary facilities are made available to the people working in it.—And I do not mean available in the sense they are available already, when a G.P. can send his patient to a hospital outpatient department and in course of time get back a brief report on what ought to be done (or what has been done) for the patient. The G.P. must have open access to these diagnostic facilities and to the specialists and consultants who are nowadays working in isolation from him.

The health centre should very largely replace the outpatient department. This does not merely imply changing the venue of the department; if it did, no useful purpose would be served. It implies cutting out the episodic care which characterises present outpatient work, by bringing the specialist into the health centre, where he should do the equivalent of his outpatient consultations in the presence of the G.P. concerned with the particular case. The G.P. would then be responsible for coördinating the efforts of the various specialists who handle the patients and for the continuity of care. More than anything else, this is a problem of organisation—and not a particularly difficult one. If the work and responsibility of the G.P. is upgraded and his facilities are improved, the volume of outpatient department work (or its equivalent in the health centre) will be considerably reduced (vide Appendix II).

In large urban health centres a good case can now be made out for the full-time employment of a consultant physician, who would be continuously accessible to all the G.P.s working the centre and who could follow up all cases which interested him. If a consultant physician, to remain at consultant level, must have hospital beds and inpatients, that could be arranged; but the bulk of his time should be devoted to work within the health centre and domiciliary work associated with this.

In the "optimum" health centre similar arguments can be adduced for full-time radiologists, pathologists, &c., working in the centre; but, as I have said, there will be little call for the "optimum" type.

The relationship of local-authority services with such a centre must be considered very carefully. Where such services are functioning even reasonably well, even under makeshift conditions, no elaborate provision should be made for them, in the first instance, within the health centre. Offices should be provided in the health centre for representatives of various branches of local-authority services (e.g., home nursing, midwifery, and health visiting), and the work of these people should be coördinated with that of the doctor working in the centre, who should in turn be encouraged to use these services to the full. Once equilibrium and understanding have been established between the G.P.s and the local-authority personnel—by no means a forlorn hope, given these conditions—the question of shifting the local-authority clinic into the health centre can be considered realistically instead of theoretically.

INDIVIDUAL AND GROUP

The ideal of "family doctoring" is still an excellent, desirable, and probably attainable ideal. However, the horse-and-buggy days are far behind, and it is absurd to try to recapture the 19th-century concept of the benign old doctor in his frock coat and silk hat sitting through the night, awaiting the pneumonia crisis or the delayed arrival of the first-born. Our task is rather to resynthesise all that is good in this concept and discard all that is anachronistic.

In this modern age such a resynthesis implies team-work between doctors, nurses, social workers, and technicians, with the general practitioner as the coördinating agent of the team. My own belief is that, as obstacles to such team-work, the so-called rugged individualism of the average doctor, and his antipathy to any form of organisation or imposed discipline, are much over-rated. The general practitioner has acquired a position of great personal power, and naturally he is not prepared to yield any of it without adequate compensation. By this I do not mean merely financial compensation. The kind of compensation I chiefly have in mind is the opportunity to do better, more useful, and more satisfying work.

Our task, as I see it, is to re-establish general practice and make it the basis of a positive preventive programme. And I suggest that, as a first step, we should form "basic group-practice units" which could be developed quickly and become the nucleus of future health centres.

THE BASIC GROUP-PRACTICE UNIT

The primary consideration is personnel, not buildings. In the first instance any shell which could be renovated and adapted might serve to house the unit.

The number of doctors who would work together would be determined by population density and the nature of communications to the site. I picture small units of 6–10 doctors, looking after 15,000–25,000 people. The unit would be fully staffed with nurses, clerical assistants, and some form of all-purpose technician who could undertake urinalysis, blood hæmoglobins, sedimentation-rates, and the like. It would be furnished with all the equipment necessary for a good G.P. service.

The crucial question is, how can the incumbents of existing general practices be enticed to coöperate in these circumstances? And now that responsibility for health centres has been vested in local authorities, how can such a programme be made to work?

If conditions for doing good work are offered, and if assurances of professional autonomy can be given, I believe that the problem of recruitment will largely solve itself. The individual doctor, apart from running his car, should have no overhead expenses to bear; he should certainly not be charged even the non-economic rent which is at present mooted. (I found the idea of even a small rental charge a positive deterrent to coöperation in any such project—quite apart from the negative deterrent of loss in tax-rebates for the doctor who gives up all his private practice.) Under such an arrangement very good terms of service should be possible. For example, it would be practicable to offer good and regular vacation and study periods. (The present offer of refresher courses, even with the provision of paid locums, is merely pie in the sky so far as many general practitioners are concerned.) These inducements, once made realities, would strongly attract both present and future practitioners to the "basic group-practice unit."

I have suggested units of 6–10 doctors looking after 15,000–25,000 people. This sets an average of 2500 patients, instead of the permissible 4000, on any one doctor's list. But with the removal of all overhead expenses, and with the other inducements offered, the financial return from this number should be enough to attract anyone except perhaps those whose lists are at present full; and we should further be able, under these conditions, to recruit young doctors in large enough numbers to maintain a ratio of one doctor to 2500 patients.

Group practice is sometimes commended on the ground that it enables the good G.P. to do specialised work and thus make his way into a specialty. But if the conditions of general practice are made sufficiently satisfying, the desire to be a specialist may lessen, and general practice may then compete for the very best medical graduates.

At the "basic group-practice unit" level of development it will certainly be possible to integrate the general-practitioner services with the hospital and specialist services, and there will be no difficulty in bringing the specialist into the unit. (At present this cannot be done.) But, for emotional and political reasons if for no others, it will be necessary to go warily with the introduction of local-authority services, and at the outset no local-authority clinics should be brought into the unit, though, as I have said, an initial liaison should be formed by providing offices for representatives of the local-authority agencies most closely allied to general practice—e.g., home nursing, health visiting, and midwifery. From this liaison the more comprehensive type of health centre should eventually develop.

The capital expense of setting up such units should not be great; but in the circumstances it is hardly a burden to be carried by local authority. The most satisfactory solution would seem to be grants-in-aid from central funds to the local authority, to be spent within the terms set down.

ADVANTAGES

Only on some such basis as this is there a chance of correcting the paradox that general medical care is at its worst in closest proximity to the large clinical centres—at its worst not only for organic reasons but equally for human and psychological reasons. Again on this basis it should be possible to remove much of the empiricism, in diagnosis and therapy, at present prevalent in general practice, and to begin the development of some effective clinical and human research, which in itself would do much to raise the status of such practice.

There is also the question of the doctor as a teacher. He is potentially perhaps the most important of all teachers: he can and often does influence individual and family conduct to a much greater extent than all the other agencies of health education put together. Yet the approach of the average doctor to this part of his responsibility is even more empirical than is his approach to organic medicine. The same factors in a basic group-

practice unit which would allow the G.P. wide diagnostic and therapeutic responsibility, while simultaneously creating safeguards against excesses, would tend to operate also in relation to his educational function.

That the group-practice health centre would improve medical care is almost self-evident. To bring together a number of people working on different aspects of a common problem, to provide them with facilities and conditions better than those they have had previously, and to offer them professional incentives to improvement—all this seems bound to result in a better deal for doctor and patient alike. But there are many sceptics, and the only way to satisfy them is by practical demonstration—I mean really practical demonstration in which the sceptics themselves have the opportunity to participate.

AN EXISTING GROUP

In section II I described the only real group practice I visited in England.

The doctors had designed and built their own clinic, which was extremely well equipped, and they employed nursing and semi-trained technical staff as well as clerical assistants. They claimed that their overhead was in no way incompatible with their income from an average of 2500 patients per head. The range of work of the four practitioners and their trainee assistant was comparable to that described for good G.P.s in New Zealand, and though they undertook obstetrics and a large amount of surgery (against which a strong case could be made) they were by no means overburdened. The record-keeping was comparatively good, and the standards and thoroughness of physical examination as high as any I saw in Britain. The head of the group told me that they had not suffered from "patient abuse" since the introduction of the new service, and it was obvious that their ways of practice had not been altered by the terms of the Act.

Judged on premises, equipment, and record-keeping, which can be assessed objectively, this practice was in advance of anything else I saw; and my subjective impression of the standards of work led me to think of it as a beacon in the darkness. Yet in its eighteen years of existence it has received no official or professional attention, and, as I have mentioned, the survey committee which looked at the cottage hospital where these doctors work did not so much as call at the "group clinic" to see what went on there. Fearing that they will in the long run be eliminated from this hospital, at least one of the group contemplates turning to a specialty.

THE FIRST STEP

Though I heard of other such groups existing in various parts of the country, I did not have the opportunity to visit any. But I have no doubt that even the most simply organised group offers an overwhelmingly better medical service than that of individual practitioners.

Even the most elementary steps towards organising the present chaos of individual general practice must result in improved medical service and a fairer deal for doctor and patient, and I am sure that these elementary steps should be taken before any grandiose or idealistic experiments in health-centre development are attempted.

The future of general practice depends on our ability to give definition to a concept which is at present nebulous. Having designed our ends, we must design means to achieve them and to maintain them. The "basic group-practice unit" is the first and most urgent necessity.

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The present state of general practice is unsatisfactory. Its defects existed before the National Health Service Act, and arise from failure to define general practice and to establish and maintain standards. For several decades general practice has adapted itself to the growth and development of hospital, specialist, and other medical services; but it has not developed concurrently.

2. The National Health Service Act has done nothing immediately or directly to disturb the structure of general practice.

3. The extension of National Health Insurance has increased the load on general practice, and at some points this has caused serious strain or near-breakdown.

4. It is difficult either to confirm or to deny the claims made that this increased load has seriously depressed the quality of medical care. It is very evident, however, that many of the shortcomings attributed directly to the Act are the result of basic weaknesses in general practice which have merely been intensified by the additional load.

5. The claims that new methods for remunerating the doctor have seriously upset the doctor-patient relationship are similarly difficult to confirm or deny, but I found little evidence that they have done so.

6. The indirect effects of the Act on general practice are much more fundamental than the direct effects, around which most of the controversy has centred.

7. The impetus which the Act has given to development of hospital and specialist services has accentuated the defects outlined in (1) above.

8. Through the agency of the regional hospital boards, decisions of policy and principle relating to hospital and specialist services are being taken. No similar decisions are being taken on general practice, and the regional boards' decisions are reached with little or no regard to the problems of general practice.

9. The executive councils responsible for general-practitioner services are fully occupied with day-to-day administration and are not working or thinking at the level of policy.

10. There is little or no coördination of the work of the executive councils and the regional hospital boards. This is not merely an administrative defect: until the executive councils take policy decisions, or have them taken for them, there is nothing of importance to coördinate.

11. For similar reasons, there is very little coördination of general-practitioner services and local-authority personal health services.

12. Hence the future of general practice is largely being determined without deliberate consideration of its problems. It is being determined mainly by the people responsible for hospital and specialist development, and in terms of compensation for recognised, or half-recognised, deficiencies, instead of the correction of these deficiencies.

13. Now that local authorities hold responsibility for health-centre development, one would expect them to be closely interested in the future of general practice. I found little evidence that this was so or was likely to become so quickly. The health centre is being considered primarily as an instrument of local-authority personal health services. Such consideration as general practice is receiving in this regard is more or less nullified by the failure to define its future province and function and to recognise it for what it really is.

14. The best elements of general practice are under attack (e.g., rural practice with cottage-hospital facilities), while the bad elements are being largely disregarded

(e.g., industrial practice). This is the result of the widening schism between the specialist and the general practitioner, and inability to see beyond the practitioner's few but dramatic sins of commission (e.g., surgical) to his many more serious, if less obvious, sins of omission (e.g., missed or mistaken diagnosis).

15. With increased inducements for the young doctor to enter the specialties, and a decreasing scope for work in general practice, the latter is becoming an unattractive proposition. Furthermore, it is difficult for the young doctor with a genuine interest in this field to find a satisfactory way into it. The easiest way is through busy urban practice, and under prevailing conditions this is the least satisfactory way.

16. Unless these conditions are changed, potentially good doctors will be devalued without elevating the quality of practice. Similarly, any hope that financial reward alone will attract good senior practitioners back to these bad conditions is illusory: the good doctor will only be attracted into industrial practice by providing conditions which will enable him to do good work.

17. This question of terms and conditions of practice is of primary importance. The defects of general practice cannot fairly be attributed to the defects of medical education. However inadequate may be the teaching of social and psychological medicine, the teaching of clinical disciplines is good; and bad conditions of practice can, do, and will continue to negate the most conscientious teaching efforts in the newer and more abstruse field of social and psychological medicine.

18. Against this background the few inducements—such as refresher courses with paid locums, and traineeships—are of very little value either as attractions or as a means of raising standards.

19. The present conditions of general practice, and the gloomy outlook for the future, have produced demoralisation in many thoughtful members of the profession. The ideas, ideals, and real dissatisfactions of a considerable number of doctors are not reflected fairly or fully by organised medicine, which has fought so vigorously for what have been called terms of service. With opportunity and encouragement, general practitioners could make a valuable contribution towards planning as well as operating the medical services.

20. If the present trend towards more and more hospital and specialist care continues, it must result in

(*a*) The elimination of general practice as an effective agency of medical care.

(*b*) The substitution of hospital, specialist, public-health, industrial-health, and similar less personal services.

(*c*) The breaking of the one remaining link which gives the patient some continuity of care, and the removal of a focal point for dealing with the non-organic problems—the psychological, economic, and social worries of the people.

Quite apart from human values, it is doubtful whether the policy of concentrating on hospital and specialist care is economically justifiable or even possible, and its hazards will certainly not be lessened by drifting into it.

Recommendations

In spite of this grim analysis of the present position and future prospects, the opportunity to re-establish general practice is still open.

First, an attempt should be made to define the future province and function of general practice within the framework of the National Health Service. This deliberative task should, in the first instance, be undertaken by the people most concerned—namely, "ordinary" general practitioners.

Secondly, basic group-practice units, such as I have described, should be formed as soon as possible. There is real urgency about launching this experimental work; for relatively soon the new patterns of hospital and specialist care will be firmly established and everything will be fitted into them. If that happens it will then be virtually impossible to do very much about general practice.

APPENDICES

I. GENERAL PRACTICE IN SCOTLAND

In the absence of recognised criteria it is very difficult to draw comparisons between practice in one place and practice in another. But after examining practice in Scotland, by methods similar to those I used in England, I came away with the firm impression that, all in all, its quality is higher than that of the English equivalent. I do not claim that the best English practice is not at least as good as the best Scotland can show; but if one can admit an average for the diverse types which go to make up what we call general practice, then in my opinion Scotland is in front.

A DIFFERENT ATTITUDE ?

The attitude of most general practitioners to both local and central authority, as represented by city and county health departments and the Department of Health for Scotland, seemed more reasonable and coöperative than that of English doctors to the corresponding authorities here. Though it could not be said that the relationships were by any means ideal, for the most part they were at least workable.

In England any association, real or imaginary, between my survey work and local or central authority militated against good relations and created obvious suspicion. In Scotland, on the other hand, wherever I went I found I could use either a local authority or the Department of Health as a means of introduction to general practice, without embarrassment and without arousing any serious misgivings. Indeed in one part of Scotland I actually travelled with an officer of the Department, who accompanied me into the various practices I visited; and the doctors were quite as frank in his presence as if I had been alone. In England, on the few occasions when I was introduced by such an officer, I found relations with the doctors strained until I had explained my association with, and established my independence of, officialdom.

The explanation that has been offered me for this difference—that it is merely a matter of the size of the community—is not good enough. The relationships even in country towns in England are often worse than comparable relationships in big cities in Scotland. There is a basic difference in attitude of mind.

This difference in attitude is reflected in other ways. In England discussion with general practitioners on the new health service usually centred on the size of capitation fees, the number of patients on the list, mileage-rates, basic salaries, and so on, until it was steered into professional as distinct from commercial channels. In Scotland I found much more spontaneous interest in professional issues such as the quality of medical service, the relation of general practice to hospital and specialist services, and the development of health centres.

I do not want to give the impression that I am attributing all good to the Scottish doctor and all bad to the English. This is not the case at all. But there is an appreciable difference.

I was similarly impressed by the difference in attitude to general practice (in the two countries) among specialists who had thought at all deeply about general practice. In England I found that many of these specialists had little genuine respect for general practice or the average general practitioner. Much more respect was shown by the corresponding Scottish specialists, and their criticisms of general practice were almost always constructive and sympathetic. Similarly the attitude of representatives of organised medicine towards the new service seemed to me more objective in Scotland than in England.

Industrial Practice

I visited fair samples of industrial practice in both Edinburgh and Glasgow, but saw nothing to equal the kind of thing described in section II of this report. The worst industrial practice I visited in Scotland was at least equal to the "good" English industrial practice I have described.

The surgeries are much the same forbidding kind of places, built to the same two-room patterns and converted from shops or residences; but they are much better equipped. I was never in a surgery where there was not an examining couch; in some there were gynæcological couches; and both of them always seemed to be used for their intended purpose. Sterilisers were usually in evidence, and instrument cupboards seemed to be well kept and reasonably well stocked.

As a rule some sort of an effort was made to keep records. I never saw anything approaching good records, and most of them were poor in the extreme; but at least there was a consciousness of the need for records, and often apology and explanation was offered for their paucity.

In the practices I visited where lists were full (4000), the doctors were extremely busy—far too busy to do good or even satisfactory work—but there was nothing like the congestion or lack of organisation described for comparable practices in England. The discipline exercised by the doctors was notably stronger and sometimes of educational value.

During my periods in various surgeries, a conscientious effort was nearly always made by the doctor to conduct some sort of a useful physical examination. In absolute terms, they were by no means good examinations; they were quick and usually limited to the organ or area of complaint; but they were purposeful and at least eliminated some dangerous possibilities. Patients were not referred to outpatient departments with quite the same readiness and lack of inquiry or thought as in the industrial practices I saw in England.

As a rule there was evidence that the minor laboratory tests which one expects to be done in general practice were in fact done. Certainly urines were tested, whenever I was present, on every occasion that this was indicated. One did not see empty and dirty bottles of Fehling's solution, and test-tubes obviously disused for months or years, lying around the sink-boards. Some of the G.P.s owned and used microscopes, and some did such things as hæmoglobin estimations.

One industrial G.P. I met, who had a full list, had managed to do enough work at his side-bench to earn an M.D.; another was interested in, and working on, the diagnostic significance of the state of the tongue; and a third was making a study of infant feeding. I do not suggest for a moment that some doctors in industrial practices in England are not attempting similar work; but if they are, with conditions as I saw them, they are exceptional men. There was nothing exceptional about the Scottish doctors I have just mentioned: they were ordinary industrial G.P.s to whom I had been referred with no special recommendation; and later, when I took other checks to see whether I was being shown a demonstration sample I could find nothing to suggest that this was so.

It is well known that a considerable number of the less able graduates from Scotland and Ireland migrate to England and find their level in industrial practice here. I have even heard it suggested that the poor quality of Scottish and other immigrant doctors is responsible for the faults of industrial practice in England. This, in my opinion, is quite an untenable thesis. "Good" and "bad" doctors have migrated from Scotland to all types of medical practice in England, the migration being stimulated at times of economic difficulty in Scotland. Many have remained, some to do well in good practices, some to do badly in bad ones. What struck me most was the number of doctors I met who at some period had gone to England (usually into industrial practice) but had been unable to tolerate the conditions and had returned to Scotland. They could all recall the type of thing described in section II of this report, recount their experience of it, and express gratification that it does not exist in Scotland.

The difference in quality of practice is principally one of degree and is by no means absolute. The patterns are the same, but the standards and attitudes are different. There are, however, two major points of contrast between industrial practice in the two countries:

1. In Scotland dispensing practice has never reached the same proportions as in England, and the bottle-of-medicine mentality has not been developed, either by doctor or patient.

2. In Scotland the general practitioner has retained some responsibility (now diminishing rapidly) for midwifery. Because of this (whatever the standards of G.P. midwifery may be) he has remained much more the family doctor than his English counterpart.

Both these facts have materially helped to maintain standards of industrial practice in Scotland.

Urban-residential Practice

In this type of practice the difference between England and Scotland is much less than it is in industrial practice. The surgeries I saw were altogether comparable, as was the nature of the work. The scope of work was no more defined in Scotland than in England, and standards were quite as arbitrary.

As I have pointed out, relations between the G.P., the specialist, and the local-authority doctors favour the Scottish G.P. The retention of some responsibility for midwifery makes family doctoring more of a reality. Also, in the practices I visited, the G.P.s seemed to do more for themselves in minor surgery and elementary laboratory work.

Rural Practice

I took a particular interest in the isolated practices of the north and west, which formed part of the old Highlands and Islands service. For this service enjoys a high reputation internationally as well as locally. It is held up as an example of a well-organised medical service giving medical care of high quality to isolated communities.

I visited about a dozen practices in different parts of the Highlands and Islands. The doctors I met were as fine men as I have met anywhere. They were proud of the service of which they were part; they put up with the harshness of climate and country, and the difficulties of living and working in this rough isolation, because they liked their people and believed in what they were doing. In short they were men of character and integrity.

I make these points with some embarrassment, not to eulogise these doctors, for whom I have the greatest personal respect as men, and certainly not to soften the

harsh comments I am about to make, but in order to illustrate a very important point which I have made previously but without the same emphasis. The point is this:

> The continued failure to establish and maintain standards of medical care, and the continued acceptance that general practice is good for its own sake, has deadened the critical faculty and sensitivity of the best of general practitioners, and has resulted in the decline of standards of practice to a dangerously low level.

Almost without exception, the doctors' houses I visited were in a state of bad repair, and some of their surgeries were hopelessly ill equipped. Perhaps I was expecting too much; but I thought that at least they would be well enough equipped to meet the emergencies always liable to arise in rough and rather inaccessible places.

Some, like the English industrial surgeries described previously, had no examining couches.

> Once, when I was visiting a doctor in quite a populous area, a patient came in with a history suggestive of appendicitis. After he had been examined by the doctor it was proposed that I should have a look at him. I asked where I could lay him down, and someone went away to the back of the house and dug out a small folding camp-bed which when assembled was about a foot off the ground. We laid the patient down and knelt round him, and after abdominal examination we were still undecided. I asked for a rubber glove or fingerstall with which to make a rectal examination: there were none. I suggested examining a specimen of urine under the microscope: there was no microscope. Finally the patient was sent twenty miles to the nearest cottage hospital, where these things could be done.
>
> On another occasion I was visiting a small maternity hospital in which most of the confinements for quite a large area of country and a considerable number of people were conducted. At this time there was a woman in the hospital suffering from a severe postpartum eclampsia and not responding to simple therapy. We discussed the case and it was suggested that she might go on to an intravenous hypertonic saline drip. There was no saline solution and no intravenous equipment. At this time the hospital was being repainted and refurnished, but not re-equipped.

These are only isolated examples, but they show that standards of practice in an organised general-practitioner service, enjoying an international reputation, can reach low levels.

Here are extracts from a letter written by a doctor who recently acted as locum tenens for one of the practitioners in an isolated part of rural Scotland.

> "The surgery was a back room, which contained a non-functioning stove, a desk, two chairs, and two bookcases. I looked in vain for the examining couch, the tools of diagnosis and minor surgical treatment; they just weren't there. Or rather there were a set of Michel clips tucked away among the cobwebs at the back of a cupboard. They came in useful, when boiled up in a pot on the kitchen stove, two or three times during my stay here.
>
> "There was a large selection of assorted drugs on the shelves, all a little dusty, with one or two large bottles of proprietary remedies on the front shelf. The doctor told me that he usually dispensed these, or else the other medicines he knew how to make. There was a bottle of procaine penicillin two years old and some rather more modern bottles of the sodium salt. This he usually used, 10,000 units daily, since the procaine variety 'was so difficult to inject without using a large needle.' There was some sulphadiazine.
>
> "I searched high and low for case records, X-ray and path reports—there weren't any. Nor were there rubber gloves, fingerstalls, or any item of sterile dressing. . . ."

These comments speak for themselves, need no interpretation, and demonstrate that, even with the best of men, failure to maintain *professional* standards can reach a point where public safety is involved.

Quite a few of the isolated practices I visited could be fairly described in similar terms. Others were better equipped and the standard of work was higher, or appeared to be. However, with one or possibly two exceptions, I saw no practice which could be considered "good" as measured against any reasonable standard. While it would be pleasant to write about these better practices, it would illustrate nothing significant, except perhaps that some individuals, of their own accord, have maintained higher professional standards than others. The important thing is that no minimum standards have been established; that in a service of this kind the work of some practitioners can fall below a minimum standard of safety; and yet that the service and the men who make it up can continue to enjoy a high and widespread reputation.

But I also have another observation to record.

I visited a cottage hospital in one place, which looked after the needs of a community extending over a radius of twenty or thirty miles from the site of the hospital. It was a ten-bed unit and was equipped with X-ray plant and operating-theatre. My visit was made on a Saturday afternoon, and I was greatly impressed by the fact that something over half the doctors who worked in the hospital's area were in attendance there. They were looking at X-ray films, discussing cases, and exhibiting an enthusiasm which was really remarkable. I learned afterwards that some of these men were running practices of the type just described, and the enthusiasm they showed in the cottage-hospital work is very difficult to reconcile with their scientific apathy in their private and individual practices. Or perhaps it really isn't; and perhaps in this simple observation lies the hope for the future of general practice and the betterment of medical services.

Nine of the ten beds were occupied by surgical cases. The one medical case was that of a girl suffering from bacterial endocarditis. Some years previously she had had rheumatic fever with cardiac involvement and she had been under more or less constant attention for several years. Her condition was regarded as hopeless, and the treatment she was receiving was 15,000 units of penicillin daily (she had received this dosage for about a week and was still acutely febrile). Professional interest centred mainly on two or three difficult surgical cases, which had been operated on by the G.P. surgeon during the previous week.

This surgical preoccupation of the G.P. who has access to a cottage hospital is important both for its own sake and in relation to the development of the medical service. It is not difficult to understand why so much interest focuses on surgery—a wholly tangible and satisfying outlet for men working mainly with intangibles and at that to only a low standard. The question is whether this interest can be turned from surgery to the less dramatic problems of medicine. I am sure that much of it can, but it is going to require a great change in the environment of general practice; it will not come about by preaching or teaching, but only by making it possible for the G.P. to do really satisfactory work in the field of general medicine.

Effects of National Health Service Act

In Scotland also I tried to correlate what was happening in outpatient departments with what was happening in general practice. I had no more success than in England; the records just were not available. However, hospital superintendents and consultants usually expressed the opinion that the volume and nature of hospital outpatient work (apart from application for appliances) had not altered substantially since July 5, 1948.

On the sample of practice I saw in Scotland, this could be anticipated; the doctors tried conscientiously to screen their patients before sending them on to the outpatient department, and those who undertook some

minor surgery and elementary laboratory work were not talking about dropping it because they were no longer paid for every item of service.

Many doctors spoke of the bigger demand for prescriptions, particularly for small things which the patient would previously have bought for himself. But resistance to these demands was much firmer than I saw in England, and though in some of the larger city practices there was talk of patients changing doctors unless every demand was met, fear of this was certainly not the main factor determining the doctors' conduct.

The direct effects of extending National Health Insurance and of introducing new methods of paying the doctor are the same as for England, but they have caused much less emotional disturbance and accordingly less immediate disturbance of the conduct of doctors and patients.

The problem of differential scales of maternity fees for general practitioners does not arise in Scotland, where doctors have not been reclassified as worth either £5 5*s*. or £7 7*s*. per confinement. This does not mean that there is general satisfaction with the G.P. obstetrician; in fact, this is far from being the case. Many regard antenatal care as a task for the specialist, and favour division of midwifery between the midwife and the specialist obstetrician.

The main point of difference in the Scottish Act, so far as general practice is concerned, is that responsibility for health-centre development is vested in the Department of Health instead of the local authorites. Though the health centre was originally conceived as a large building which would house local-authority services, with, at some stage, some sort of provision for general practitioners, a new concept is developing rapidly. In the newer plans, though the centre serves as the coördinating agency for preventive and curative services, it is primarily a place for medical care and for better general practice.

The indirect effects of the Act are the same for the G.P. in Scotland as in England. His position is seriously threatened by specialist and hospital development unrelated to the development of general practice. His greatest hope for survival lies in a practical policy for health centres. For this reason, and also because he has on the whole maintained better standards than his English colleagues, his position is more hopeful and more defensible.

II. GENERAL PRACTICE IN NEW ZEALAND

The New Zealand experiment in health insurance and medical care has been cited by some as an example of the evils of "nationalised" medicine and by others as an example of its benefits. Indeed it has provided evidence for both sides on almost every contentious issue arising in the new British National Health Service.

Most of the objective reports on the New Zealand service have dealt with administration and planning, and have dwelt on the rather dramatic results of the fee-for-service method of paying the doctor. The attention given to this question of doctors' incomes and patient abuse of a "free" medical service has indeed obscured other important lessons to be learnt from the service, and before going further I must say something about it.

Remuneration

The New Zealand general practitioner can receive his remuneration in one of several ways:

1. Fee-for-service (with or without additional private fee, known locally as a "token" payment).

2. Capitation fee.

3. Salary (in "special area" practices: these are chiefly in remote rural areas and mostly populated by Maoris).

4. Private arrangements with the patient as before the Act was introduced.

To complicate this picture there are two methods by which the doctor can claim his fee-for-service: (1) directly from the State; or (2) directly from the patient, who in turn claims repayment from the State. Moreover any one doctor can use more than one of the methods listed above.

The vast majority of doctors work on the fee-for-service system in one of its forms. It is hardly necessary to point out the abuses to which this system is open and the difficulty of controlling these abuses. Proper control of any large fee-for-service system would require an immense bureaucracy and even then might not be feasible. I have seen one small fee-for-service scheme in the U.S.A. (the Maryland Medical Service for the indigent), which is thoroughly controlled for a population of about 100,000; but even the officials responsible for it are uncertain whether they could maintain their controls for a population greater than a quarter of a million. The questions which at once come to mind are:

(1) How great is the abuse by doctor and patient of the fee-for-service "free" medical scheme?

(2) What are the real effects of this abuse on the standard of medical care?

At its worst the abuse is very great. There are individual general practitioners in cities and large country towns making five-figure incomes on the basis of 7*s*. 6*d*. per item of service. These doctors see great numbers of patients (albeit nothing like the numbers seen in some English industrial practices); they encourage the patient to return with all kinds of trivialities, for repeats of prescriptions, or for courses of dubious injections; and they visit on the slightest indication or perhaps no indication at all.

There is evidence of even worse abuses than these—of doctors collecting "patients'" signatures, for service rendered, where no service has in fact been given. There are stories in plenty of doctors passing the "book" round to collect signatures at a party, of doctors standing a round of drinks in the local hostelry and collecting a fee for service in return, and of other such "amusing" incidents. All these things are possible and many doubtless true.

In ethical terms perhaps the worst offenders are those I call "company" doctors—men with well-established practices who employ juniors on a generous salary and on the basis that they see so many patients per week. This is the ultimate application of legitimate commercial behaviour to a profession we like to consider non-commercial in attitude and conduct. To those who regard medicine as an especially moral and altruistic profession, it is an ethical and moral outrage.

Such conduct is of course indefensible; but, apart from financial considerations (the cost of such behaviour to either the individual or the nation), what matters most is its effect on medical care, both directly on general practice, and indirectly by affecting recruitment to the specialties. Once again, this brings us up against the question of what is good general practice. It also highlights the difficulty of distinguishing between moral and material issues.

For example there is one "company" practice in New Zealand well known because its principal was an early and strong advocate of the service. This practice handles an enormous turnover in terms of numbers of patients and items of service and accordingly brings in an enormous income. It is equipped to handle the volume of work, and the men working in it are "good" men, the net result being that, at least from an organic point of view, the medical service offered by this practice is "good," if considered in relation to the average "good"

practice I have visited here. However, the professional attitude to it is one of strong disapproval.

PRACTICE WITH ANCILLARIES

One practice in which I myself worked for a time deserves rather detailed description, because it illustrates many points which need thought.

This was a one-man practice looking after more than 7000 people scattered over a large rural district (some boundaries being as far as thirty miles away from the surgery). The population was mixed Maori and European, some receiving their attention as "capitation" patients and some as "fee-for-service."

The surgery was improvised in quarters above a shop. It was well planned, well equipped, and from a functional point of view very good. There were two consulting-rooms, two examining-rooms (one divided off with a place set aside for minor surgical procedures), a large waiting-room with a side-room equipped with ultra-violet, infra-red and short-wave instruments, a reception and record room, and a side-bench with sink, burners, reagents, test-tubes, and microscope.

Three nurses were employed. They were all trained at least for their general certificate; one had a special pædiatric training. One nurse spent most of her time "on the district": she took and "vetted" most of the calls coming in during the day. The doctor took those patients he chose for himself and any he was asked to see by the nurse, who made a first visit. Another nurse sorted out the patients into those requiring consultation, those needing some minor surgical procedure, and so on, and put them in consulting-rooms or prepared them for examination, dressing, suturing, &c. The third nurse saw principally mothers and children, did some of the antenatal work, tested urines, prepared slides for examination, and looked out records.

The doctor consulted, examined, did an item of minor surgery, and either wrote or dictated his notes immediately afterwards.

The volume of work handled was immense; almost no time was wasted; and yet the human relations between doctor and patient were excellent. The record-keeping was as good as any I have ever seen in general practice and enabled me as a locum to cope with the work without the floundering, searching, and misunderstanding usual in one's early days in a strange practice.

Besides the work in the surgery and the domiciliary visits, this practice handled a great deal of midwifery (I averaged almost a confinement a day during my tenure) and an appreciable amount of general surgery at the local cottage hospital.

Working with a team of nurses in this way is really a modified form of group practice. It grew up in response to demand and certainly not because of the doctor's hunger for a large practice. The overhead was great but by no means incompatible with the income. Patient discipline was intelligent and firm, and there was nothing that could really be called "patient abuse."

There seems something almost unreal about recounting this practice after the type of thing I have been seeing in England, where a higher patient-load has generally resulted in depression of the scope and quality of service rather than any positive endeavour to meet the difficulties by better organisation, individual or collective initiative, or even constructive planning.

This practice I have described illustrates one way of meeting such difficulties. It uses nurses to a level of responsibility I have not seen elsewhere; it maintains a humanism usually lost long before the load of work reaches these proportions; it works to a clinical level equal to the average of the "good" rural general practice in England which has cottage-hospital facilities, and it keeps records as good as any I have seen in general practice. Nevertheless this practitioner has the reputation of running a completely commercial type of practice, because his turnover is so large.

EXTENT OF ABUSES

None of this answers the questions of how great is the abuse by doctor and patient of the fee-for-service scheme and what is the effect of these abuses on the standard of medical care. But it does show that financial abuse is not necessarily synonymous with bad standards of care.

There is a great deal of evidence that many doctors frankly abuse the scheme at the expense of quality of service. The worst of the abuse is in the urban areas, where it is easy to attract large numbers of patients and where they can be encouraged to come back frequently.

One can only hazard a guess at the proportion of doctors who are flagrantly abusing the scheme. Thirty per cent. would probably be a high figure, and in any case the actual number of doctors misconducting themselves in this way is not the important thing, except for the cost involved. What is really important is the fact that some or any doctors can use their position thus, and that this can be known and tolerated both by the public and the medical profession as a whole. Indeed, in a sense, the profession does more than tolerate the abuse; for it actively endorses the fee-for-service scheme which permits and even creates this sort of thing.

This type of misconduct is bound to lower standards of medical care. But, without any definition of general practice and without any criteria of quality, it is impossible to talk in absolute terms about the rise or fall of standards. Generalising very widely I should say that a New Zealand practice where most of the possible abuses are carried out is usually, from the patient's point of view, as satisfactory as a "good average" practice in England. It must be remembered that in these circumstances the quality of the individual doctor may be the sole or primary determining factor in the quality of practice. As anywhere, there are some very bad doctors, and practice is very bad where they are settled; but it is impossible to correlate this with terms of service. The worst practice I saw in New Zealand was one run by a doctor who refused to work any of the State schemes and continued in private contract with his patients, among whom he enjoyed a high reputation.

After ten years in which to observe the advantages and the disadvantages of the service for their patients and themselves, the attitude and thinking of the doctors are still dominated by emotion and finance.

CAPITATION AND SALARY

The doctors working capitation practices are all men who from the beginning favoured a national medical service and as early as 1938 (i.e., before the amending Act of 1941, which introduced the fee-for-service system) agreed to work a national medical service on a basis of capitation. Hence these doctors were philosophically in line with a "State" service, and to that extent they must be considered partisans. But however much this may affect their appreciation and opinion of the service it cannot affect their quality as doctors or the quality of the practices they run. While in New Zealand I was reviewing their practices and not their opinions.

The situation is somewhat different as regards the salaried practices, which cover "special" areas. The most special thing about these areas is that before the introduction of the service there just weren't any doctors working there. Most of these places are in Maori territory, and the absence of doctors before the late '30s was due not to prejudice against Maoris but to the fact that Maoris could not afford to buy medical

service. There are also some salaried practices on the west coast of the South Island in isolated and remote rural and mining communities. Before the war some of these practices were filled by displaced persons from Europe, most of whom have done remarkably well. It must also be pointed out that the autonomy of these salaried practitioners is absolute. They are paid a salary, given an area of country with a certain population to look after, and then left to their own devices. (They are of course given car allowances and mileage.) They are not worried by bureaucratic controls, demands for reports, or periodic inspections. This is a state of affairs usually regarded as impossible: salaried practice is assumed automatically to be synonymous with "civil service" or "bureaucracy" or call it what you will.

During my stay in New Zealand I worked in two capitation and two salaried practices and visited some others of both types. All these practices had been operating in their respective ways for at least five years. All of them, in terms of the standards I have witnessed in England, were "very good." None of the presupposed evils of either of these systems of practice were evident. The doctors did not grow lazy or slack, or develop the so-called civil-service attitude: so far from the patients and doctors trying to take advantage of each other, their relationship seemed better than I have witnessed or experienced in other types of practice. In fact, professional considerations took priority over commercial ones.

A COUNTRY PRACTICE

To illustrate some of these points I must relate an experience I had when I took over a practice in a completely Maori area in a remote and beautiful part of the North Island. The area of the practice was very large, the roads were very rough, and the population was about 2500.

I knew quite a lot about the doctor who ran the practice. Before the war he had worked in a city, and he had taken this country appointment for personal reasons in spite of the fact that he was opposed to salaried service or a national medical service of any kind. I thought that under these circumstances I would most certainly see the bad effects of salaried service.

At our first meeting he told me that I would have very little to do, and I jumped to the conclusion that here was an example of how to take it easy on a salary. It transpired that he had announced my coming and had stated that I would be available for all emergencies, for all maternity work, and for three hours a week for general consultation, and, as he put it, "for the curious to come and take a look."

He explained to me that he made these arrangements for all locums, however good or bad, and went on to explain that the majority of *his* patients were *his* dependants and that he did not want me or anybody else disturbing this relationship unnecessarily. This was certainly a change from the usual embarrassed intimation, from doctors (even the most conscientious) operating on a fee-for-service basis, that they usually saw about so many patients a day and please to try to maintain approximately the same figure. In some degree the healthy attitude taken by this doctor was reflected in all the capitation or salaried practices I worked in or visited.

To complete the account I must relate that this doctor was doing a most thorough job with about half the demand on his time usual in a practice looking after this number of patients. He had a very well-equipped surgery and well-kept records, and was doing some independent epidemiological investigation.

I am not trying to claim that in New Zealand salaried or capitation practice has made bad doctors good, or lazy doctors energetic; but I do want to point out that I found no evidence of the converse and no evidence that these ways of remuneration spoil the doctor-patient relationship.

In the most isolated practices I visited in New Zealand I found none so bad, professionally, as those I saw in similar situations in Scotland.

Differences

Considering New Zealand practice in broad terms, and within the framework used to consider practices in England, we can examine the differences.

For the most part the average surgery, urban or rural, is better functionally, and, except for the "good" practices I have seen here, it is much better equipped. I have described one rather extraordinary practice, but there are many where the surgery is planned to meet properly the requirements of a doctor's workshop. The traditional pattern of two rooms—one in which the patient waits and one in which everything else is done—is as much the exception as the rule in New Zealand.

The ordinary surgeries are nothing elaborate or special; they may consist of no more than three rooms instead of the usual two, but from a functional and organisational standpoint this makes a great difference to the doctor and so to the patient. Many doctors have some sort of clerical or nursing assistance at their surgery, and this reflects rather their recognition of the need for this assistance than any undue opulence on their part.

However, the really important differences lie not in organisation or mechanism but in the scope of the G.P.'s work, his degree of responsibility for medical care, and his relationship with hospital and specialist services.

I mentioned previously how some British doctors fear "patient blackmail"—i.e., loss of patients if all their demands are not met. This fear was apparently not shared by the New Zealand doctors, though some confessed that in the early days of the service they used to worry along the same lines. They seem to have learnt, in the few years of "free" service, that their patients respect and accept honest discipline and respond to personal education.

SCOPE AND RESPONSIBILITY

In a way, the New Zealand scheme is the antithesis of the British. In New Zealand the primary responsibility for medical care rests with the G.P.—not because of any deliberate plan but merely because G.P. services have been "free," whereas, outside the hospitals, consultant and specialist services have had to be paid for by the patients. In contrast to the elaborate regional planning which has gone on in England, there has been little or no planning of hospital and specialist services. The New Zealand G.P. has thus been left with a field of responsibility and a scope of work comparable to that of the rural G.P. in England; and there is no doubt, to my mind, that the reaction of the individual doctor to responsibility is one of the chief factors determining the quality of medical care.

Hence the equilibrium between general-practitioner and specialist services is quite different in New Zealand from what it is in Britain. In specialist and also hospital development, New Zealand is relatively backward; but from the point of view of the patient it is a much better place in which to suffer the worries and troubles of ordinary illness.

Nobody knows just what the equation between G.P., specialist, and hospital services should be. Because medical knowledge and technique have advanced so far and so fast, we feel compelled to make available in quantity the higher flights of knowledge and service. In the interests of his own subject, and hence of himself, each specialist and hospital planner feels justified in

pushing his own interest to the limit. In this enthusiasm one is prone to lose sight of the patients' interest. In New Zealand, though there are no health centres or any other organised clinics, general practice is highly developed, while hospital and specialist services are relatively poorly developed. Because the balance is so different from what it is in England, I feel sure that an objective study of medical care in New Zealand would provide valuable complementary evidence on what division of function best serves the patient.

I put forward the reactionary thought that the patient, as a person, is better off receiving his medical attention through the undeveloped New Zealand service than he will ever be through any highly developed service depending chiefly on hospitals and specialists.

MIDWIFERY AND FAMILY DOCTORING

Another major difference between general practice in New Zealand and Britain is that the G.P. has retained his responsibility for midwifery. In New Zealand the G.P. is the specialist in normal midwifery. For the most part he does his own antenatal care and his own deliveries, and from my observation he does both of these things conscientiously and well. There are doubtless many bad obstetricians among the G.P.s there, but I came across no really incompetent ones. I never saw a doctor tell a four months' pregnant woman to come back in a couple of months to be "antenataled," as I have seen here, and in nearly all the practices I visited or worked in the antenatal records were well kept.

What I want to emphasise, however, is not the quality of the doctors of either country as midwives, but rather the benefit to general practice, as represented by benefit to the patient and emphasis on "family," which results from the G.P. doing the midwifery.

If "family doctoring" is to mean anything, to be worth anything, and to be an attainable goal, the G.P. must be the midwife. The New Zealand general practitioners for the most part can fairly be called family doctors. They know most of the mothers intimately and they get to know them principally through their attentions during pregnancy; they are proud of the babies they deliver and they watch their development with interest. The G.P.s themselves are the pædiatricians, and it would be very difficult to justify the development of pædiatrics as a specialty, as it is becoming in England and has already become in the United States. All this favours the patient even if it does not favour the future of potential and would-be specialists, and it also favours the national purse.

DIAGNOSIS, SURGERY, AND CHILDREN

The G.P. in New Zealand has open access to the diagnostic facilities of the hospital, both laboratory and radiological. In the bigger cities he is excluded from the larger hospitals as he is here, and accordingly the pattern is the same in that the standards of general care rise as one moves away from the large urban centres; but the differences between the various types of practice in New Zealand are less than in Britain. The urban G.P., never getting inside a hospital, can still do a very high level of diagnostic work. He can have his X-ray and laboratory tests done without referring his patient to an outpatient department or a consultant, and, if he is so minded, he can do a thorough job of investigation before making a referral. On the whole the New Zealand general practitioner screens his patients much more thoroughly than his counterpart in England, and those he sends to hospitals and consultants are much better selected.

Despite the better opportunity to do good work, and the wider range of work undertaken by the general practitioner, the problem of excessive surgery by the G.P. exists in New Zealand as here; and, if the reformers have their way, the patterns of medical care in New Zealand could well follow the English trends. The New Zealand situation should be studied before this happens.

Local-authority services in New Zealand are seldom developed to anything like the level in Britain. On the pro-rata basis, school medical services (though not run by local authorities) are comparable in the two countries, the chief difference being that in New Zealand they are probably quite redundant, because the general practitioners take an interest in, and look after, the children. It would be interesting to know how many children not previously examined by their own doctor are examined by school doctors, and how much significant disorder unknown to the family doctor is unearthed by the school service. On my reckoning and experience it would be very little (eyes may be an exception to this).

Significance of the Experiment

The real significance of the New Zealand experiment does not lie in the problems most commonly discussed —the fee-for-service system and its abuses, the over-prescribing, the under-specialisation, or the failure to develop a planned hospital programme. It lies in the rôle and conduct of the general practitioners.

It should also be realised that the New Zealand plan is not, in fact, a medical plan; it is an economic device to provide a prepaid medical service at the level of general practice. The doctors have not had to adapt themselves to new ways of practice, and they have, to date, been able to control the economics of the situation in their own interests.

The tolerated abuses of the economic plan reflect no glory on any of the responsible parties, least of all on the doctors themselves. The political tolerance of the abuse and extravagance can be interpreted on the one hand as political weakness, or on the other as philosophical strength and patience, born of the hope that, allowed sufficient latitude, the medical profession will exercise its own disciplines and justify the autonomy it enjoys at present. The expressed determination to perpetuate the ways of "abuse," as set down in the report of the Cleary Commission, make this hope look forlorn.

What effects are the easy rewards of general practice having on recruitment to the specialties? Obviously they will attract the commercially minded, but I am sure that the specialists would not profess a desire to have these people in their ranks. The added attraction of quick security must also divert some highly skilled people, who would otherwise pursue a specialty, into general practice. This is a good or bad thing according to one's attitude to general practice. Many specialists, in New Zealand and elsewhere, regard general practice as a kind of prostitution for the man of talent, and so express concern on seeing good men go into general practice. However, from the many young doctors I met in New Zealand and those I have met abroad, I believe that none who genuinely want to pursue a specialty are being wooed away from their desire by quickly and easily attainable wealth.

In this regard, too, the British plan is the antithesis of the New Zealand. Everything here is designed to draw the good man into the specialties. The possibility that the rewards of general practice in New Zealand do in fact help to retain good men in this branch of medicine is perhaps the sole justification for the extravagance, expense, and abuse inseparable from the fee-for-service system.

As regards administration and planning there is nothing to be learnt in New Zealand, except from the school dental services. As regards general practice, within the existing concept of that service, New Zealand could teach us a great deal.

Special Articles

INCIDENCE OF TUBERCULOSIS IN NURSES IN A DUBLIN HOSPITAL AND THE STEPS TAKEN TO REDUCE THIS

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DURING the last twenty years a great and increasing interest has been taken in the incidence of tuberculosis in nurses and the methods to be used in an endeavour to reduce this. It is now clearly recognised that nurses, even in general hospitals where tuberculosis is rigidly excluded, run a far greater risk of developing this disease than do comparable members of the general population.

SOME COMPARISONS

It is surprising how different are the figures given by different authors for the incidence of tuberculosis in nurses (table I).

One reason for this difference is that some authors only include cases of tuberculosis which occur during the training period, whereas others follow up their nurses for years after they have completed their training. Heimbeck

TABLE I—INCIDENCE OF TUBERCULOSIS IN NURSES

Country	Author	Nurses studied	Cases of tuberculosis	Incidence %
U.S.A.	Ross (1930)	800	48	6·0
,,	Shipman and Davis (1933)	143	9	6·3
,,	Geer (1934)	934	42	4·5
,,	Ulmar et al. (1936)	1000	21	2·1
,,	Amberson (1941)	885	61	6·9
,,	Badger and Ritvo (1941)	510	21	4·1
,,	Brahdy (1941)	2230	40	1·8
,,	Dufault (1941)	174	16	9·2
,,	Israel et al. (1941)	637	68	10·7
,,	Hahn et al. (1941)	269	1	0·4
Canada	Bow (1937)	2281	29	1·3
,,	Wright (1941)	144	10	6·9
Norway	Heimbeck (1936)	1037	77	7·4
Sweden	Malmros and Hedvall (1938)	434	23	5·3
Denmark	Heckscher (1940)	1108	33	3·0
France	Genevrier et al. (1942)	280	7	2·5
New Zealand	North (1941)	152	12	7·9
England	Prophit survey (1945)	5091	118	2·3
Ireland	Present survey (1949)	501	43	8·6

References taken from Prophit survey.

does this and includes in his numbers one nurse who developed phthisis 18 years after starting her training. I have done the same and include one nurse who developed tuberculosis 9 years after starting. Another reason for the difference in the incidence of the disease is that some surveys were started earlier than others and so show rather higher figures, since there has been a slow but steady decline in the incidence of tuberculosis in almost every country of the world during the last 50 years. A third reason is that some races are more prone to develop tuberculosis than others. This is well brought out in the Prophit survey (table II).

TABLE II—INCIDENCE OF TUBERCULOSIS IN DIFFERENT GROUPS

Group	No. examined	Cases of tuberculosis	Incidence %
Prophit Survey, 1934–43			
Group A hospitals	1241	24	1·9
,, B ,,	2692	47	1·8
Irish and Welsh nurses	937	41	4·4
Adelaide Hospital, Dublin, 1920–47			
Irish nurses	501	43	8·6

Group B hospitals had no tuberculosis wards and did not accept chronic or advanced cases, while Group A hospitals took in all classes of patients, including advanced cases of phthisis. The Irish and Welsh nurses worked in both groups of hospitals but their figures were separated from those of the English and Scottish nurses who worked in these hospitals and were given separately. The table shows clearly that the Irish and Welsh are more susceptible to tuberculosis than are the English. Similarly in America, and even more decidedly, the negro is more susceptible than the white.

MEASURES ADOPTED

Even allowing for increased susceptibility in our nurses the figure of 8·6% at the Adelaide Hospital is

TABLE III—TUBERCULOSIS IN NURSING STAFF AND MEDICAL STUDENTS AT THE ADELAIDE HOSPITAL

Period	Total	Cases of tuberculosis	Died
Nurses			
1920–38	312	29 (9·0%)	4 (1·25%)
1939–47	189	13 (6·87%)	1 (0·5%)
1948–49	47	1	0
Medical student			
1920–38	350	11 (3·2%)	0
1939–47	147	5 (3·4%)	0

very high and is worth considering further. In 1920 no specific precautions were taken to prevent infection of nurses with tuberculosis. As the years went by it was realised that general measures were insufficient; and in 1932 it was decided to X ray all nurses before accepting them for training. In 1938, patients with open phthisis were excluded from the general wards and transferred to isolation wards. This does not mean that there is no danger of infection in the general wards, for unrecognised cases of phthisis are admitted from time to time into surgical or medical wards. Some of these are recognised later but not all. Cases of surgical tuberculosis with discharging wounds are also a source of danger. In 1939 we decided to do a tuberculin-test (Mantoux) on all probationers, to repeat it on negative reactors every 6 months, and to take further X-ray films of the lungs of those whose tuberculin-reaction changed from negative to positive. In 1948 we decided to X ray all nurses in the hospital every 6 months and to inoculate with B.C.G. all probationers who were Mantoux-negative on entry. In

TABLE IV—MANTOUX-POSITIVE AND MANTOUX-NEGATIVE ENTRANTS COMPARED

Entrants	Total	Tuberculosis	Died
Nurses (1939–49)			
M−	93	6 (6·4%)	0
M+	143	8 (5·6%)	1
Medical students (1939–47)			
M−	27	1	0
M+	72	4	0

table III our nurses are grouped according to three time-periods; and I have put in some figures relating to medical students of the hospital for comparison. This table reflects, I think, the downward trend of the incidence of tuberculosis which has been observed in Ireland.

It is, however, of greater interest to consider the difference, in the incidence of tuberculosis, between those nurses who are Mantoux-positive on admission, and those who are Mantoux-negative (table IV). It is worth while comparing these figures with those of the Prophit survey (table V) and of Heimbeck (table VI.)

TABLE V—ENTRANTS IN THE PROPHIT SURVEY AND THE ADELAIDE HOSPITAL COMPARED

Entrants		Total	Tuberculosis
Prophit survey (1934–43)			
M−	Group A hospitals	229	8 (3·5%)
	Group B ,,	491	19 (3·9%)
	Irish and Welsh	250	21 (8·4%)
M+	Group A hospitals	1012	16 (1·6%)
	Group B ,,	2201	28 (1·3%)
	Irish and Welsh	687	20 (2·9%)
Adelaide Hospital (1939–49)			
M−		94	6 (6·4%)
M+		142	8 (5·6%)

It will be seen that our figures of tuberculosis in Mantoux-negative nurses are comparable with those of the Irish and Welsh nurses in the Prophit survey.

In table VI our figures for Mantoux-negative nurses again compare favourably with those of Heimbeck. The incidence of tuberculosis in nurses who were Mantoux-positive on entry is distinctly higher than is found in either of these tables but statistically this is of no significance, and is explained by the small numbers of nurses in my survey.

COURSE IN THE NURSES AFFECTED

The 14 nurses who developed tuberculosis may be considered more fully. The lesions in those who were Mantoux-negative on entry are shown in table VII.

TABLE VI—NURSES AT ULLEVAL HOSPITAL (HEIMBECK 1948) COMPARED WITH THOSE AT THE ADELAIDE HOSPITAL

Group of nurses	Total	Tuberculosis	Died
Ulleval			
Nurses in training			
M− entrants	284	97 (34·2%)	10 (3·5%)
Given B.C.G.	501	35 (7·0%)	2 (0·4%)
M+ entrants	668	22 (3·3%)	0
Trained nurses			
M− entrants but became M+	178	8 (4·5%)	2 (1·1%)
Given B.C.G.	377	7 (1·9%)	2 (0·5%)
M+ entrants	504	13 (2·6%)	1 (0·2%)
Adelaide Hospital			
All nurses			
M− entrants	94	6 (6·4%)	0
M+ entrants	142	8 (5·6%)	1 (0·7%)

Of these six, five had their primary complex about 6 months after starting training.

One nurse, who had erythema nodosum, was sent home for 3 months' rest but foolishly took a job as companion and developed a pleural effusion forthwith. Two others developed effusions 6–8 months later but recovered and were fit for work within a year. Another two developed a slight infiltration into one lung after a longer interval, had 12 and 15 months' rest, and then returned to complete their training; all 5 have remained well since.

Nurse 6 had a cough fairly continuously from the start of her training but remained Mantoux-negative and radiologically normal for 2½ years. She then became Mantoux-positive with an attack called "flu" and developed phthisis 6 months later. She was in Forster Green Sanatorium and had an artificial pneumothorax (A.P.) induced. She is still getting refills and is very well and married. It is now almost 9 years since she started her training.

TABLE VII—NURSES MANTOUX-NEGATIVE ON ENTRY

Nurse	Signs at time of primary complex	Months from start of training	Tuberculous infection	Months from start of training
1	Erythema nodosum	5	Effusion	5
2	Dry pleurisy	6	,,	14
3	Nothing	3–12	,,	16
4	"Flu"	7	Phthisis	31
5	Nothing	1–9	,,	41
6	"Flu"	30	,,	36

Of the eight Mantoux-positive nurses (table VIII) two developed phthisis after they had completed their training and had left the hospital.

Nurse 9 had nearly completed her training when she developed a cavity in one lung; an A.P. was induced and she went to Forster Green Sanatorium. There she did well and was discharged, keeping up her A.P. She then developed an empyema with a mixed infection and subsequently died.

Nurse 10 had a minimal infiltration which appeared after 14 months; she was away for 6 months and apparently got completely well; when she had almost finished her training she developed a tuberculous kidney and had a nephrectomy, but is now well.

Nurse 11 had a doubtful infection previously and should never have been accepted for training; after 9 months she had

TABLE VIII—NURSES MANTOUX-POSITIVE ON ENTRY

Nurse	Tuberculous infection	Mos. from start of training	Later history
7	Phthisis	72	Married
8	,,	57	Off work 12 mos.
9	,,	42	Sanatorium; A.P.; married; empyema; died
10	,,	14	Off work 6 mos.; completed training; tb. kidney, 48 mos. after start
11	,,	9	Doubtful earlier infection when at school; off work 19 mos.; recurrence 12 mos. later
12	Effusion	35	On sick leave
13	,,	5	Erythema nodosum 1 month after entry
14	Miliary	2	Streptomycin; sanatorium; to take up nursing again after 20 mos.

a recurrence but was so well 19 months later that we allowed her to start work in our convalescent home; she broke down again a year later and was in Forster Green Sanatorium.

Nurse 12 was Mantoux-positive to 1/100 on entry. Almost three years later she had a feverish attack with severe headache and pleuritic pain in her chest; an X-ray examination showed slight effusions at her left base and right superior fissure, which cleared up in a few days. During this illness her Mantoux test became positive 1/10,000, and I believe that her pleurisy was tuberculous.

Nurse 13 was a very puzzling case. She was Mantoux-positive to 1/10,000 on arrival and one month later developed erythema nodosum. She had no evidence of streptococcal or other infection which could account for the erythema nodosum, and I believe that she was undergoing her primary infection at the time of starting. She developed a pleural effusion 4 months later.

TABLE IX—MANTOUX REACTIONS IN NURSES AND STUDENTS FROM DIFFERENT BACKGROUNDS

Subjects and their origins			Total	M+	M−
				%	%
Adelaide Hospital					
Nurses	Ireland		236	60·2	39·8
Medical students	Ireland		99	72·7	27·3
Prophit survey					
Nurses	England,	Rural	310	80·0	20·0
		Urban	3025	82·0	18·0
	Wales,	Rural	118	65·3	34·7
		Urban	176	80·7	19·3
	Ireland,	Rural	330	65·2	34·8
		Urban	215	81·4	18·6
Medical students	England,	Rural	104	85·6	14·4
		Urban	1260	85·6	14·4

Nurse 14 was also very puzzling. She was not looking well 2 months after starting training although she felt perfectly well and was full of energy; a routine X-ray examination suggested a miliary infection of the upper parts of both lungs. She had no temperature at any time and after the first few days looked and felt perfectly well. She was treated with streptomycin and transferred to a sanatorium in Wales; she remained extremely well and her lungs cleared completely. She is coming back to us to complete her training.

From 1939 to 1949, 236 nurses have started training in the Adelaide Hospital and of these 142 were Mantoux-

positive on entry and 94 Mantoux-negative. It is of interest to compare these figures with those of some of our medical students and of the Prophit survey (table IX).

I have not been able to divide our nurses into those who come from rural and urban districts, but the majority are rural in origin. If our figure for Mantoux-negative nurses is compared with that of the Prophit survey for Irish nurses, combining rural and urban nurses into one group, there is a significant difference—39·8% in this series as against 27·0% in the Prophit survey—for which I can offer no explanation.

TABLE X—TUBERCULIN REACTIONS ON JOINING THE ADELAIDE HOSPITAL AND SUBSEQUENTLY

Reaction as entrants and later	Nurses	Medical students
M +	142	72
M − became positive during training	50	15
M − no conversion ; training uncompleted	21	8
M −, and at end of training	1	4
M −, and given B.C.G.	22	..
	236	99

Of the 94 Mantoux-negative nurses 50 have become Mantoux-positive and only one nurse remained negative to the end of her 4 years' training period ; 21 are still in training or have left hospital before they were qualified, and 22 had B.C.G. (table X).

It is generally agreed that the first year after the conversion of the Mantoux-test from negative to positive is the period in which there is greatest likelihood of developing tuberculosis. We have tried to send our nurses home for 3–6 months' rest as soon as they develop their primary complex. In practice however many of our nurses have gone through this stage without any disturbance to their health whatsoever, and conversion has only been recognised by a subsequent routine Mantoux test (table XI).

TABLE XI—SYMPTOMS OF PRIMARY COMPLEX IN NURSES AND MEDICAL STUDENTS AT THE ADELAIDE HOSPITAL

Symptoms	Nurses	Medical students
Erythema nodosum	9	0
Feverish attack, "flu"	9	3
Pleurisy—dry	3	0
,, —with effusion	0	1
Phlyctenular conjunctivitis	1	0
No symptoms	28	11
Other symptoms	0	0
	50	15

It is of interest that we have had three cases of erythema nodosum amongst our nurses who were Mantoux-positive on entry. One whom I have already mentioned had this condition 1 month after arrival and developed a pleural effusion 4 months later. The other two had it 23 and 38 months after starting training and both had concomitant sore throats.

ROUTINE USE OF B.C.G.

Before candidates are called up we ask permission from their parent or guardian to give them B.C.G. if they are Mantoux-negative, and in no case has this been refused. Since the beginning of 1948 we have given the vaccine to all who were Mantoux-negative on arrival, and we have to thank Dr. Dorothy Price and her associates for enabling us to do this. They are Mantoux-tested as soon as they arrive in the hospital and if negative to 1/100, are given B.C.G. immediately. This takes a week, and since our nurses are in the preliminary training school and not on the wards for 8 weeks, they have 7 weeks after the inoculation before coming into contact with any case of tuberculosis. Six weeks after the inoculation we retest each nurse with a strength 1/100 and about half of them are then positive. By the end of 3 months most of the nurses have positive Mantoux reactions, but one nurse is still negative at the end of 1 year. Results have been as follows :

Inoculated with B.C.G.	22
Left hospital within 6 weeks	1
Conversion in 6 weeks	10
Conversion between 6 weeks and 3 months	6
Conversion in 3–6 months	3
Mantoux-negative after 1 year	1
Mantoux-negative after 3 months	1

The last nurse has only been in hospital for 3 months and I hope will be found to be positive at her next Mantoux test. The nurse who is still negative is an example of the cases where B.C.G. is given but fails to produce any primary complex. One of our medical students had a similar failure and had a second inoculation with B.C.G. but again there was no conversion of the Mantoux reaction.

We have tried for some time to keep Mantoux-negative nurses out of the wards where there are tuberculous cases, but this is very difficult to manage in a small hospital where patients are sometimes found to be suffering from phthisis as well as the condition for which they were admitted. The use of B.C.G. and the conversion of almost all Mantoux-negative nurses to positive overcomes this serious difficulty. Actually it is probably an advantage for nurses to have some contact with tuberculosis after they have had B.C.G. and become Mantoux-positive, since the encounter reinforces the degree of immunity produced by B.C.G. Half of these nurses have become Mantoux-positive to a dilution of 1/1000 tuberculin some months after they were positive to 1/100 only ; and this, I believe, is due to repeated absorption of small numbers of tubercle bacilli by all nurses working in hospitals, and indeed by most members of the general population. Occasionally nurses and others receive a larger dose of organisms, and, if Mantoux-negative, may easily develop symptoms.

One of our nurses on retesting 6 weeks after receiving B.C.G. gave a rather doubtful reaction to a strength of 1/100. Ten months after the inoculation she was very strongly positive to 1/1000, her area of infiltration being over 3 in. in diameter and her whole forearm swollen from elbow to wrist. At the same time her three B.C.G. nodules swelled up and became red. She felt ill and had to be kept in bed for a week and then given a period of sick leave.

It is far too soon to try and draw any conclusions about reduction in the incidence of tuberculosis among our nurses through the use of B.C.G. and the various other methods I have mentioned. But we feel that it is of the greatest importance and a matter of urgency to do everything within our power to lessen the danger of this infection to our nursing staff.

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"... Ninety-eight more millions are required for the Health Scheme, and one more youth is to be hanged for murder. ... Both suggest that the health, moral and physical, of this nation is not what it should be. ... In both cases the trouble may be due to too much cure and not enough prevention ; hanging and flogging, pricking and drugging—instead of enlightenment. It would be cheap for this country to spend fifty million a year in films to teach the people how not to need the doctor, and how not to put so much hope in the medicine bottle and the prick, by spreading better notions about cleanliness, the constitution and working of the human body, diet, and the rearing of children. It would be not only cheap but charitable as well to spend another fifty million to prevent youths from being flooded with crime images in cinema halls by giving them better films."—S. de MADARIAGA, *Manchester Guardian*, March 17, p. 6.

SOME CAUSES OF THE CARNAGE ON THE ROADS *

FROM A CORRESPONDENT

MANY remedies have been advocated for the carnage on the roads, but comparatively little has been written on the more basal question of ætiology. It is customary to blame the car-driver and to demand a more stringent driving test or heavier penalties against sinners. As doctors, we should look more closely at other removable causes such as bad lighting, lack of road signs, and the many hazards of the highway. Let us take two examples:

Lighting.—A man is driving his car westward from Shepherd's Bush to High Wycombe. From Westway until he reaches Horn Lane he glides along a safe well-lighted double track. At that spot, *without warning*, he is suddenly plunged into semi-darkness on a dangerous winding single track until he reaches Park Royal. The lighting then improves, but the single track threatens him as far as Greenford. This piece of highway treachery is unfair to the driver and dangerous to the public.

Road Signs.—Again, the driver who has only a bowing acquaintance with the main roads leading out of London gets little help from the authorities. From time to time he may be told the destination of roads that slink away to the right or left, but he is never by any chance given the name of the street along which he is actually travelling. Now and again, at great risk to himself and other road users, he must squint up at some building in the hope of deciphering a street name. In cities like New York the authorities tell him at every cross-roads (*a*) the name of the street on which he is driving and (*b*) the name (or number) of the cross street. He is thus able to keep his eye on the road and drive safely.

THE DRIVING TEST

We ought also to call for an impartial examination of the driving test itself. There is a deplorable lack of statistical information on the examiners' findings, though we are told that the rate of failures under test conditions is about 36%. The regulations were introduced in a praiseworthy attempt to improve standards of driving, and to increase the margin of safety on the roads. Are they achieving their object? Is the system helpful to applicants as an education, or is it merely becoming a tyranny of tricks and rules? In the car-driving test as it stands today the victim suffers many disadvantages. (1) He is seen by only one examiner, for a very short period, perhaps in a strange town. (2) He is probably nervous and ill at ease, and therefore liable to errors that he would not normally commit. (3) He has not previously had an opportunity of driving alone, and so lacks the confidence of personal experience. (4) If he fails he must either not drive at all or return to the leading-strings for a whole month—or risk a fine of 10*s.* and a month's imprisonment. And lastly (5), the examiner knows nothing about the candidate's background or training.

No doubt the Ministry of Transport has conducted operational research into these matters, and it would be useful to know something of the results. The following points would be instructive:

1. The proportion of applicants passed at each attempt, area by area.

2. A comparison of the results over several years.

3. An analysis of the results of first and subsequent tests with reference to the candidate's age, sex, and possibly occupation.

4. The main reasons for failure put forward by examiners.

5. The pass-rate at different times of the day and on different days of the week.

6. The difference, if any, between wet days and fine days.

7. The results of presenting the same candidate to various examiners.

8. A psychological study of the success or failure of applicants, in relation to simple personality features.

Psychology of the Driver

An investigation of the candidate's personality might be particularly interesting. Thus, broadly, one would expect the extrovert to make a good showing at his first test. He concerns himself primarily with objects, facts, and persons in his immediate environment, and he tends to be practical in affairs. On the other hand, he soon ignores the lessons learnt, because he is essentially opportunist. He shows no great concern for others. The introvert is more concerned with his own impulses than with direct response to varying outward sensations. He shows up badly, as a rule, in "snap" tests, but his discrimination and judgment are sounder than these would suggest.

A psychological study would be misleading without an exploration of the broad no-man's-land between normality and the neuroses. The obsessional may do splendidly in an examination, if he concentrates for the time being on the object of his desire; but in the long run he will be unreliable as a driver. The anxious type, on the contrary, almost invariably does badly under test conditions but is more likely to be conscientious and considerate on the road. Unfortunately the anxiety tends to be progressively exaggerated by repeated examinations, and the unhappy victim is deprived by the regulations of his one chance of success—an opportunity to gain confidence through practice by himself.

The Tenderfoot

A further question we should ask is simply this: what proportion of automobile accidents are associated with recently tested motor-car drivers? The figures might be further broken down and analysed.

LIGHT-FLASHERS

It is curious that apparently no-one has referred to the new nightmare of discourtesy—light flashing at cross-roads in the city. The other day we had to attend medically to a woman who had collided with a lamp-standard on the pavement. She had been temporarily blinded by a selfish driver who persisted in flashing his headlights on and off to save himself the trouble of slowing down. This cruel and dangerous malpractice is on the increase, and should be forbidden.

* See Dr. C. A. Learoyd's article of Feb. 25 (p. 367).

Public Health

Mortality in Northern Ireland

IN Northern Ireland during 1949 the infant mortality (45 per 1000 live births), the maternal mortality (1·27 per 1000 live births), and the death-rate from tuberculosis (59 per 100,000) were the lowest ever recorded. The birth-rate, at 21·4 per 1000 population, showed a small decrease but was still above the average recorded for the ten years before the war. Last year 24 persons died of cancer for every 10 who died of tuberculosis; but there has been no increase in deaths from cancer in the past seven years.

Q Fever in Germany

The Office of the Surgeon-General, U.S. Army, has reported that 90 civilian cases of Q fever have occurred at Zusenhausen (population 1500), near Heidelberg. Most cases have been mild, although 1 death has been reported. The diagnosis has been confirmed by the Fourth Medical Laboratory, Heidelberg.

The source of the epidemic has not yet been ascertained by the German health agencies. Presumably Zusenhausen represents a new area in Germany for this disease.

In England Now

A Running Commentary by Peripatetic Correspondents

As a surgeon I'm finding life very hard these days, not because of the growing amount of work but because almost every day I have to operate on somebody who only a year or two ago would have been labelled inoperable and left to die in peace—cases of carcinoma of the pancreas or stomach, of bleeding peptic ulcer, and so on. Most of them are referred from other hospitals or departments. What with transfusions and penicillin quite a few do recover; but of course some still die. Nowadays we are expected to cure them all; and when one dies it's a severe blow to my reputation and to the department which referred him to me—this patient whom no-one would have dreamt of operating on a couple of years ago. The patients who do well just disappear and are more or less forgotten; but those who die are remembered, and whenever there is a death in my wards it takes me a couple of days to recover—to get back into full mental working order. I am in a state of constant anxiety; and I can see no end to it. I can't blame anyone but myself and my vanity in concentrating on the apparently hopeless cases. I wish now that I had specialised in pilonidal cysts or hammer toes.

* * *

At Olympia the Ideal Home Exhibition, which is open until April 1, offers something for almost every domestic taste. The furniture on view ranges from genuine and imitation antique to the most modern, which now includes a set of panels and fittings that can be joined up into different articles of furniture. There is a French exhibit showing a room prepared for a banquet—a rather too stimulating sight. There are many fascinating fireplaces, most with real fires burning. The mass of electrical household items is incredible; there seems to be nothing that cannot be done by electricity except setting the table and making the bed. The cooking stalls are reminiscent of displays of magic, now that pressure-cookers have reduced the time of cooking from hours to minutes and seconds. The W.V.S. have forceful lessons to teach about the safety of children in the home. Mr. Cube is there, complete with a model West Indian plantation. Cocoa is represented, and New Zealand has sent over a typical house. In the eighteen gardens spring flowers abound, flowering shrubs are everywhere blossoming, and the bulbs are magnificent; and how delicious it is to smell carnations and roses in March. With its demonstration of apprentices learning carpentry and other home-like occupations, even the Army does not disturb the idyllic atmosphere.

* * *

When I rang up one of the London teaching hospitals the other afternoon—it was a trivial errand, just to ask a friend of mine on the house to play golf at the week-end—I reflected that the reputation of a hospital mainly depends not on the senior surgeon or even the secretary of the management committee, but on the girl who answers the telephone.

After a minute or two's ringing a voice snapped "Golgotha Hospital." "I'm so terribly sorry to trouble you," I said in my most deprecating manner; "I wondered if I might speak to Mr. Forcep?" But the voice had vanished as unaccountably as Ariel's music. In a couple of minutes she returned and cut short my abashed request by barking, "You want surgery." I was wondering if she had discerned my deviated septum over the wire when a rough male voice announced, "Surgery 'ere. Wotcherwant?" "Could I please speak to Mr. Forcep?" "Oozat?" "Mr. Forcep." "Never-eardofim. Is 'e a stoodent 'ere?" I established the bona fides of my friend and was told to 'oldon. There followed the depressing sound of the receiver being abandoned on the desk, which I recognised as the death-rattle of constructive inquiry. When three or four silent minutes had passed I reached for THE LANCET and began reading the leader pages. I was well into the annotations when a fresh superior young male voice sounded in my ear. "Do you want the stools straight away?" he asked. "I'd better send them now. They'll be no use to you if they're not warm." I told the unknown I didn't want his stools. "Aren't you the path. lab.?" he demanded crossly. I explained I wasn't. "Oh damn!" he said. I had started on the original articles and was suffering severe ischæmic pain in my right arm when a sweet female voice told me abruptly, "Your wife is as well as can be expected and you may visit her tomorrow between the hours of two and four." "Thank you," I said humbly, being by now grateful for any attention, however irrelevant. Five minutes later the rough voice snarled, "'Is board's marked 'Out.' Bin marked 'Out' fer weeks," and he crashed down the receiver. Luckily it was only Wednesday, so I sent a post-card.

Hospital telephone girls have a lot to put up with, of course, what with irate surgeons and bare inquiries like "How's our Ada to-night?" But they could profitably study standing orders for telephonists at, say, a West End shop. It's as nice to hear a pleasant voice say immediately, "Selfishes, good morning," as it is to get an unexpected smile from a pretty girl on the bus. Why, even if you ring PAD 7000 a delightful young soprano exclaims "Paddington Station, may I help you?" Try it and see. But my favourite call is to a ladies' hairdressers round the corner which I discovered one day with a lucky wrong number. I'll spend tuppence any time just to hear that delicious voice say eagerly, sweetly, but with the inflection that infers she means business: "Madame Pompadour, at your service."

* * *

Shame on my friend of March 11 that he should write of Hornibrook's system of abdominal exercises in a spirit of ribaldry. He has only himself to blame if his abdomen is not less protuberant than before. A protuberant belly cannot be made to shrink, any more than Rome could be built, in a day. These exercises are unusual, grotesque, even suggestive; but their potency as a remedy for simple constipation or a corpulent abdomen (not generalised obesity) cannot be denied.

When I was a surgical dresser, my chief found in one of his beds a woman admitted for—among other things—surgical treatment for constipation. This surgeon seemed not to like the idea of such an operation and agreed with alacrity that we should try the effect of Hornibrook's exercises. The woman left the hospital ten days later having daily spontaneous bowel movements. She wrote to me for years afterwards that this happy state of affairs still obtained and that she still followed the ritual. She was the most grateful patient I have known. I recall a man with a corpulent abdomen who practised the exercises for a few minutes daily and after three weeks could insert his hand sideways between his abdominal wall and his formerly well-fitting trousers.

Most people get the result they want but in the end give up the exercises, preferring to spend the few minutes in bed and put up with their symptom. Those faithful ones who persevere do not "have nightmares featuring a fiend answering to the name Hornibrook."

* * *

The family were discussing that poor lad who could not stop sneezing. (By the way, what happened to him in the end? I hope, since we did not see anything more in the papers, we can assume that the general press rule holds: Bad news is news; good news is not.) Well, the children wanted to know what other things could go on more or less for ever. Hiccups was obviously the first, and then squinting and nose-bleeding. It is our custom to discuss all non-drawing-room subjects frankly but politely. Thus, the passage of flatus is known as "bottom-talking." We had previously been into the possibility of articulation per anum. So of course we were asked whether people are ever unable to stop their bottom talking. "But," said Jeremy, "how on earth would they write about it in the newspapers?" "Luckily," I replied, "there is one weekly newspaper which has a special column for such strange matters, called *In England Now*." The children thought this over for some time. Then one of them asked, "What will they do if the first person whose bottom won't stop talking is a Frenchman?" "Let us," I suggested, "adopt the maxim of Mr. Asquith, and wait and see."

Letters to the Editor

VAGOTOMY FOR ULCERATIVE COLITIS

SIR,—Your annotation of Jan. 14 raises the question of the therapeutic effectiveness of vagotomy in ulcerative colitis. This is open to much debate and discussion. In the first place, there is no evidence at the present time that the vagus innervates the colon. Apparently vagal fibres stop at the ileocæcal valve. The impulses from the vagus nerve must be mediated through Auerbach's and Meisnner-Billroth's plexuses in the right half of the colon up to the ascending limb of the splenic flexure. These plexuses are continuous with those in the ileum. The vagus plays only an indirect rôle in ulcerative colitis. The emotions causing this disease are primarily transmitted over the sacropelvic nerves.

What vagotomy does do is to slow down peristalsis of the small intestine; and it prevents such a high titre of unattenuated or inactivated pancreatic enzyme, particularly trypsin, reaching the unprotected mucous membrane of the left half of the colon. For that reason, therapeutic results might be obtained by vagotomy. However, one can completely paralyse the vagus nerve by atropine and accomplish the same end-result as is seen in vagotomised patients.

Furthermore, no-one knows at the present time what the section of the vagus nerve does to the gastro-intestinal tract. It is not an innocuous operation. That some individuals are no better after vagotomy for treatment of their peptic ulcer is evidence in itself that a complete vagotomy cannot be done in every patient. The fibres decussate into the œsophagus and the impulse is carried down into the myenteric plexus higher than the site of section of the nerves. I refer you to Waltman Walters's observations on this particular aspect of vagotomy in the treatment of peptic ulcer. Finally, ulcerative colitis is a disease of the parasympathetic nervous system. No-one to my knowledge has reported this manifestation occurring in Hirschsprung's disease.

One added thought regarding the innervation of the colon. If you do an ileostomy, hypermotility of the small intestine continues, but the right half of the colon is at rest. Therefore vagal fibres in themselves apparently do not innervate this portion of the bowel. If they did, you would not abolish hypermotility of the right half of the colon. There is no evidence, now, that there is a high titre of lysozyme secreted in the colon at the right half and in the ileum as the result of vagal stimulation.

With these facts in mind, I would have to state that there is no indication for vagotomy in the treatment of ulcerative colitis at this time. Maybe future clinical observations might make me change my mind.

Chicago. SIDNEY A. PORTIS.

CONTINUOUS DRIP TREATMENT OF PEPTIC ULCER

SIR,—Dr. Clark (March 11) has done a useful service by his careful evaluation of technique and theoretical considerations in the continuous drip treatment of peptic ulcer. However, his attitude to the management of this disease and the conclusions he draws ought not to remain uncriticised.

I doubt whether many will agree with him that this method is less trouble than more conventional Hurst or Sippy régimes. It is unlikely that it would often be practicable to maintain a patient's enthusiasm for this treatment for more than a few days at home, and even if this could be done it would be no substitute for the enforced rest, sedation, restriction of tobacco, and change of environment that treatment in hospital involves. It is this latter factor that is most important. The temporary removal of the social and psychogenic causes of his ulcer is surely of far greater importance than the drugs and milk preparations the patient takes.

Little can be concluded from the cases described. The figures are not well presented and the manner in which they are broken down is ambiguous. However, allowing for this, they are in no way remarkable and present no evidence that the drip method is an advance in treatment. No controls are produced to show the difference of response in another similar group treated more conventionally. Controls in this series ought to have been considered essential, for the cases are highly selected, in that all the patients are in receipt of a disability pension. Further comment on this is unnecessary, except to remark that the social and psychogenic factors in the production and maintenance of these patients' ulcers do not seem to have been considered.

The follow-up, which falls within the natural periodicity of the disease, does not show any improvement on the more conventional methods of treatment. The assessment of healing by radiological and clinical methods may well have missed several cases of ulcer which could have been demonstrated gastroscopically as being still active.

These criticisms are made chiefly to underline the extraordinary degree of empiricism which has ruled the management of peptic ulcer since the days this disease became a major social and industrial problem. From the great mass of writing and knowledge obtained concerning this disease, it is surely time the most rational and effective approach to this problem was abstracted.

Our empiricism, our varying standards of treatment, and our different opinions concerning ætiology and prevention, do not offer an effective challenge to this social menace. It is true to say that this argument applies to most diseases we attempt to treat, but a great advance would be made if the medical profession could be presented with authoritative and proven guidance on this particular problem.

Chelmsford. C. A. HOULDER.

A SUBJECTIVE VIEW OF ACUTE POLIOMYELITIS

SIR,—The excellent article on p. 460 of your issue of March 11 prompts me, having recently suffered a milder attack of poliomyelitis, to offer some reflections on the state of mind of the patient during the acute stage.

The standard textbooks describe the patient as "apprehensive": my own mental state was, by contrast, one of surprising indifference. Though obviously ill, I was quite unconcerned by my condition, and made no serious attempt at diagnosis! In spite of severe headache and cervical pain lasting for three days, I was not distressed and required neither sedative nor analgesic. Intense vertigo, which persisted, gradually diminishing, for several days, was the only symptom which occupied my mind at all frequently, and though the subjective sense of rotation was so gross as to defeat all my attempts to sit up, it alarmed me not at all.

This lack of insight continued, to a lesser degree, for a fortnight or more after the acute phase, and was associated with a highly exaggerated sense of well-being, and a totally unaccustomed tendency to bouts of facile laughter. This was certainly an alteration of emotional tone, and not an attempt, conscious or unconscious, at adjustment to the situation. The mental state, in fact, must have resembled that seen typically in the patient suffering from disseminated sclerosis, and did not revert completely to normal until the fifth or sixth week.

As an inexperienced student, I have had little opportunity of observing (adult) patients during the acute stage of poliomyelitis; but conversation with, and inquiry among, convalescent patients and others who have recovered lead me to wonder whether (particularly by comparison with the mood of patients in the general

wards) the "couldn't care less" attitude and the subsequent euphoria might not be found to be almost as common as the classical apprehensive state. Even allowing for some toxic confusion, the comparative unconcern in retrospect not infrequently shown even by the severely paralysed patient in acute poliomyelitis is quite astonishing, and, I would add, extremely fortunate. Surely there cannot be so many stoics among us?

L. W.

HOME HELPS FOR THE TUBERCULOUS

SIR,—I should like to draw attention to the following case. Application was made, in London, for a home help for a patient awaiting admission to hospital. This patient, though tuberculous, is not suffering from active tuberculosis, but from a complication resulting from a failed extrapleural pneumothorax. No help was forthcoming for a week—and then a very limited amount—although there was no-one to look after the invalid except another tuberculous person in full-time employment. When asked why help could not be supplied, the authority concerned explained that, out of 38 home helps, only 2 would attend the tuberculous, the rest being afraid of contracting this disease. A form had been issued to these workers which stated "I have been informed that there is a tuberculous patient at . . ." Probably such a form is used to safeguard the council against claims for compensation. I appreciate that it would not be possible to determine whether a worker had been infected through acting as a home help or through some everyday contact; but is not the solution to recognise the possible risk, and pay danger money to those willing to work for all patients suffering from some infectious or contagious disease, and to include them in the categories covered by the Industrial Injuries Act? Owing to the great shortage of hospital beds tuberculous patients cannot readily gain admission, but on the other hand, unless they are very fortunate, they cannot have the services of a home help.

London, S.W.6. E. D. ANDREWS.

*** We comment on Miss Andrews's letter in an annotation this week.—ED.L.

POTASSIUM DEFICIENCY IN *p*-AMINOSALICYLIC ACID THERAPY

SIR,—In bringing to light the question of serum-potassium levels in P.A.S. therapy, Dr. Cayley (March 11) has done a service to those working on the chemotherapy of tuberculosis; but I wonder whether the title of his paper should not have been "Potassium Deficiency in Prolonged Sodium Salt Administration," rather than imply that a depression of the blood-potassium level is associated with the *p*-aminosalicylic radicle.

In this connection it would be interesting to hear whether, in fact, it was the sodium salt of *p*-aminosalicylic acid that was used on the three cases which he cites. As you know, Sir, it is sodium P.A.S. which is predominantly used in this country in the treatment of pulmonary tuberculosis, and—whereas free acid granules and other salts are available—it is not unreasonable to suppose that the administration of a sodium salt over periods of ten weeks, five weeks, and four weeks (as in the 3 cases) in fairly high dosage might well so alter the sodium-potassium ratio as to cause depression of the serum-potassium level.

I am sure that it will be agreed that Dr. Cayley has not shown that "in patients with pulmonary tuberculosis under treatment with . . . P.A.S. the serum potassium may be dangerously lowered," since:

(1) this may be a "sodium effect" as suggested;

(2) only 2 cases are described with a reduced serum-potassium level; and

(3) in case 2, the reduction is not of a "dangerously low" order.

In the Scandinavian countries where free P.A.S. (as opposed to its sodium salt) has been in use for some six years now, no effect on potassium metabolism has been reported.

These criticisms are in no way intended to minimise the value of Dr. Cayley's findings, which are of some importance in view of the present-day trend towards prolonged administration of sodium *p*-aminosalicylate; but I would point out that this depression of serum-potassium level is one of the factors which has prompted the clinical trial, at present proceeding, of calcium *p*-aminosalicylate, the initial results with which seem promising.

Grove Park Hospital, London, S.E.12. M. M. NAGLEY.

POSTOPERATIVE PARALYSIS IN THE UPPER EXTREMITY

SIR,—I read with great interest the articles by Mr. Ewing and Dr. Kiloh in your issue of Jan. 21. In the subsequent correspondence on the prevention of such lesions I have been rather surprised to find no reference to the simple apparatus illustrated here. This, I believe, was designed in the Western Infirmary, Glasgow.

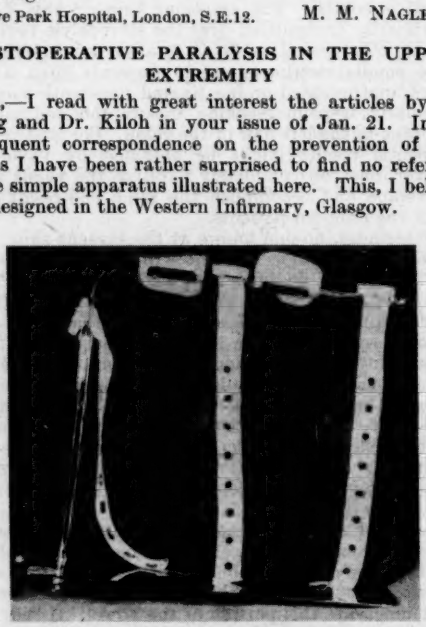

Fig. 1—The vicson arm-rest.

For abdominal surgery both upper limbs are placed in the slings, where they are out of the way of the surgical team and readily available to the anæsthetist. For operations on the breast or axilla, the forearm on the affected side is padded with cotton-wool and carefully

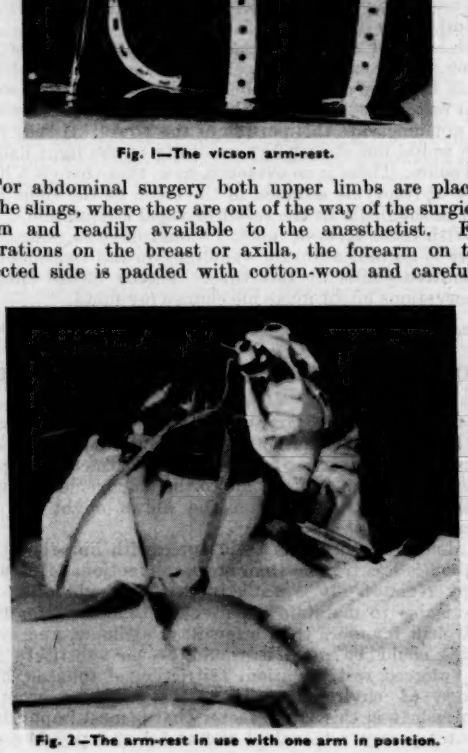

Fig. 2—The arm-rest in use with one arm in position.

bandaged to the vertical part of the bar. The angle of the arm can be adjusted to give the optimum exposure, traction on the plexus being minimised by the flexion and pronation of the forearm.

For intravenous injections with this apparatus the cephalic or radial veins are used. The veins on the dorsum of the hand are of course readily available, but the use of a needle with Gordh diaphragm adaptor in a cephalic vein avoids multiple punctures. The cephalic and radial veins are more suitable than the median basilic or median cephalic for infusions of blood or plasma.

The use of this or some similar support would appear to have some place in the prevention of lesions of the brachial plexus.

The 'Vicson' arm-rest is manufactured by Messrs. Vicarey, Davidson & Co., 162, Bath Street, Glasgow.

Royal Naval Hospital, Plymouth. A. D. SINCLAIR.

SOCIAL SIGNIFICANCE OF SYMPTOMS

SIR,—In his article of Feb. 11 Dr. Gooddy has done good service in bringing to light the manner in which the unrecognised neurotics are clogging the working of National Health Service and greatly adding to its cost by their repeated demands for medical attention, recognition of their symptoms, and special examinations. However, he seems to have failed to appreciate that in psychopathology the symptom is a very complex structure, that its roots extend deep into the personality, and that it is in many respects an anachronism. It plays an important part, for it strives to serve a dual purpose—that of attaining some measure of solution or expression of a deep unconscious conflict, or the partial gratification of an equally deep and unknown want, while at the same time it is used as a defence against the anxiety which may arise from the "wish" for gratification of primitive instinctual urges.

Often when listening to the neurotic's tale of woe I am reminded of the lines of Richard Lovelace (1618–58) which he wrote to Althea from prison:

> "Stone walls do not a prison make
> Nor iron bars a cage;
> Minds innocent and quiet take
> That for an hermitage;
> If I have freedom in my love
> And in my soul am free;
> Angels alone, that soar above,
> Enjoy such liberty"

I read these lines as a boy in my grammar book, but they were then rendered noxious to me by the addition of a single sentence—"Parse and analyse the above lines." Now isn't that in a sense exactly what happens when the neurotic is relating his symptoms?—we make a critical analysis of his words instead of trying to understand the full meaning for him of the symptoms which he describes so vividly and often with so much emotion. If we listen attentively we shall appreciate that he is in a state of conflict; he is a prisoner and yet his own gaoler; he is yearning for that "something" which is portrayed in the above lines; he feels frustrated because he cannot get understanding or help as to how to achieve his objective. "Broken glass in the stomach" is a very graphic way of describing a feeling of "pent up jangled emotions inside one," or again the act of smoking beneath a "No Smoking" notice is evidence of a deep rebellion against the world which doesn't attempt to understand and thwarts him at every turn.

I appreciate that it takes time, patience, and experience to listen to these people and unravel their difficulties, to lay bare their deeper wants and conflicts, and show them some real road by means of which they may at least try to reach the desired goal.

Undoubtedly several factors may be exacerbating the prevalence of neurosis today. The National Health Service Act has promised free treatment—whether of the body or psyche—and at the same time we have an elaboration of the social services and assurances of freedom from want; so no wonder the neurotics, with their "unknown wants" come flocking for treatment and will not be easily put off. They will tend to produce new symptom complexes until they get what they want or give up in despair. Present trends in mechanised production are another factor, for many neurotics, who can adapt happily to a certain tempo, are unable to keep pace when this is increased. And in mass production the worker is often employed on uninteresting repetitive processes, instead of having the satisfaction of seeing "his job" finished.

Bishop's Stortford, Herts. D. N. HARDCASTLE.

AGAROL

SIR,—The Minister of Health mentioned 'Agarol' in the House of Commons on March 14, and asserted that it was "the subject of heavy advertising." Neither agarol compound nor any other William R. Warner product has ever been advertised to the public in this or any other country. Their sale results entirely from medical prescriptions and recommendations.

The Minister's comparisons were somewhat misleading:

1. The price difference between the prescription pack of agarol and the substitute emulsion is not as great as indicated; and we understand that, with the N.H.S. system of averaging scripts under 5*s*., the 14 oz. agarol costs the Exchequer exactly the same as the *N.F.* substitute—usually between 2*s*. and 3*s*. If agarol happens to be in the list from which the average is computed, it will put the average up a trifle more than does the substitute.
2. Although the *N.F.* formula is offered as a substitute for agarol, it is not identical.
3. Agarol is manufactured to a standard of quality by a process which is not used by most, if any, manufacturers of the *N.F.* substitute.
4. The whole cost of evolution of the agarol formula and of its introduction to the medical profession was borne by this company.

William R. Warner & Co. Ltd., London, W.4. ELIOT WARBURTON.

VITAMIN B_{12} AND PERNICIOUS ANÆMIA

SIR,—Certain references to my work in your leading article last week require qualification.

"... small doses, such as 10 μg., produced a reticulocytosis but no satisfactory subsequent rise in red cells or hæmoglobin."

The fact is that 10 μg. produced a mean rise of red blood-cells in 15 days about equal to the "average" standard of Della Vida and Dyke (1942) for response to liver extract. Such responses would normally be regarded as "satisfactory," but we found that larger doses produced even greater effects, roughly in proportion to the logarithm of the dose.[1] Fortnightly doses of 10 μg. of vitamin B_{12} were tried experimentally under closely controlled conditions, and found not to be adequate for all cases. For routine purposes in patients whose blood is examined only once in 6 months we usually give 30–60 μg. every three weeks. Reasons for giving larger doses to patients with subacute combined degeneration are discussed elsewhere.[2]

The preceding remarks refer to vitamin B_{12} itself. With respect to varieties of vitamin B_{12} derived by Lester Smith from *Streptomyces griseus*, sufficient time has not yet elapsed for a satisfactory determination of requirements either for maintenance or for patients with subacute combined degeneration.

The following sentence should be modified by inserting the words which I have put in italics:

"... considers that a mixture of 5 μg. of vitamin B_{12} with 50 ml. of human gastric juice *given daily* has about the same hæmopoietic effect as a *single dose of* 10 μg. of vitamin B_{12} given parenterally."

1. Ungley, C. C. *Brit. med. J.* 1949, ii, 1370.
2. Ungley, C. C. *Brain*, 1949, 72, 382.

Incidentally this applies to only 1 of the 3 cases which I reported at the meeting of the Royal Society of Medicine to which you refer; the ratio between the total dosage of vitamin B_{12} given orally with gastric juice and the dose which would probably be needed by injection to produce an equivalent response varies considerably from case to case.

The Royal Victoria Infirmary, Newcastle upon Tyne. C. C. UNGLEY.

SIR,—In view of last week's report by Dr. Dyke and his colleagues on the synthesis of vitamin B_{12} in the alimentary tract of a man at autopsy, it may be of interest to refer to work carried out at the University of Michigan in 1948 and 1949 during the tenure of a Rockefeller fellowship, and reported to the Scottish Society for Experimental Medicine in October, 1949. This was the preliminary part of an investigation of the extent to which remissions and relapses in patients with megaloblastic anæmia might be related to the production or destruction of pteroylglutamic acid or vitamin B_{12} by bacteria in the small intestine.

An intestinal tube was passed to the lower end of the ileum in three patients with pernicious anæmia in relapse and two controls. All these patients were fasting. The secretions of the alimentary tract were assayed for pteroylglutamic acid, and for growth factors for *Lactobacillus leichmanii* (chiefly vitamin B_{12}). In none of the subjects was there any significant amount of vitamin B_{12} or pteroylglutamic acid in the small intestine. In patients and controls the contents in a day's stools were about 5 µg. of vitamin B_{12} and 0·5 mg. of pteroylglutamic acid. In a patient with ulcerative colitis, each ml. of material obtained from the lower end of the ileum contained approximately 0·03 µg. of growth factors for *L. leichmannii* and 12 µg. of pteroylglutamic acid—much larger amounts than in the other patients, but not surprising in view of the fæcal nature of the aspirated material.

It was considered unlikely that relapses and remissions in pernicious anæmia could be associated with changes in the intestine flora of the small intestine. Further experiments are in progress.

Department of Medicine, University of Edinburgh. R. H. GIRDWOOD.

SIR,—In your leading article last week you state: "There is now sufficient evidence for us to say that preparations of vitamin B_{12} from liver or from *Streptomyces griseus* will produce a remission in pernicious anæmia, and that regular dosage will maintain a normal blood picture."

Some of your readers may hold less categorical views as a result of their own experiences. There is of course evidence to indicate that vitamin-B_{12} preparations *may* produce remission in pernicious anæmia and that they may also be able to maintain a normal blood picture; but judging from reports reaching us of the inability of vitamin-B_{12} preparations alone to do so in many cases, some qualification of your conclusion appears to be required.

The British Drug Houses Ltd., London, N.1. FRANK HARTLEY Scientific Services Director.

ALMROTH WRIGHT AND UNDULANT FEVER

SIR,—May I add one item to the rich harvest of knowledge about undulant fever which Sir Weldom Dalrymple-Champneys has given us in his Milroy lectures, published in your last two issues? Almroth Wright was, I think, the first to attempt prophylactic immunisation of man against this disease.

A few experiments with monkeys had shown that some degree of protection was afforded by inoculation with either a dead or living culture of *Brucella melitensis*, but no more animals were available. Wright backed his belief that immunisation would be effective (this was before the days of anti-typhoid inoculation) by injecting himself with a killed vaccine and afterwards with a living culture. Unfortunately the protection, if any, was not adequate, and he went down with a very unpleasant attack of Malta fever which lasted many weeks. He often told me of the misery of those weeks, with their drenching sweats.

Was this, perhaps, the earliest instance of an attempt at preventive inoculation with a killed vaccine and a "challenging dose" of living culture?

Farnham Royal, Bucks. LEONARD COLEBROOK.

EPIDEMIC MYOSITIS ON BOARD SHIP

SIR,—In view of the comparative rarity of epidemic myositis (*Diaphragmatic pleurisy*) the following small outbreak in a passenger liner seems worth recording. I have not been able to trace a previous epidemic in a passenger ship, but Huss [1] described one in two Swedish warships that called at Marstrand. The crews were healthy on arrival, but epidemic myositis was present in the village. A few days after the ships had sailed some cases were seen in both ships, and within a month 34% of the men were affected.

In the present instance the passenger liner carried 2140 persons—1530 passengers, and 610 crew. Altogether 34 persons were affected—1 officer, 19 passengers, and 14 crew. All these cases had their onset within 19 days. These are conservative figures, for several cases of stiff neck, painful neck, shoulder, and arm, and 3 cases of pain in the chest, all among the crew, and 3 or 4 cases of unexplained abdominal pain and pyrexia in children probably also belong to the series; but these have been excluded because their probable ætiology was not recognised at the time. All the cases were in adults aged 17–30, except 2 in children aged 5 years and 7 years and 1 in a female passenger aged 37.

As in all previously reported outbreaks of epidemic myositis, these cases occurred during hot weather. The symptoms lasted 2–4 days, with two exceptions, one of 19 and one of 64 days (with a remission of 30 days in the middle of this period).

The outstanding symptom was pain, usually over the right costal margin but sometimes on both costal margins and less frequently on the left side only. In most of the cases either the patient complained of pain in the right hypochondrium or pain could be elicited by pressure. The woman of 37 had pain over the gall-bladder area for 11 days before there was any chest pain, and this case was at first mistaken for cholecystitis. The pain was worse on deep breathing, movement, or pressure. Recurrences of pain were common in this series. The pain was never very severe and could not be compared with the "devil's grip" reported by American workers.

There was seldom any pyrexia. The patient whose condition was at first mistaken for cholecystitis ran a temperature of 101–102°F for six days, and the two children had temperatures of 101° and 101·6°F. In the longest illness (64 days) pyrexia lasted only seven days. Nichamin [2] states that more than half his 75 cases were practically apyrexial, and McDaniel [3] says that almost all his cases were without fever, whereas Macdonald [4] reports fever in 91% of 70 cases, and Jamieson and Prinsley [5] report that 34 of 35 cases were pyrexial from the onset.

Dizziness, headache, and weakness were common. No vomiting or disturbance of the bowels was noticed among the adults.

No pleural rub was heard in any case, but this may have been due to the difficulty of auscultation on board

1. Huss, R. *Bull. Off. int. Hyg. publ.* 1934, **36**, 1083.
2. Nichamin, S. J. *J. Amer. med. Ass.* 1945, **129**, 600.
3. McDaniel, W. S. *Nav. med. Bull., Wash.* 1944, **43**, 664.
4. Macdonald, R. R. *Penn. med. J.* 1938, **41**, 919.
5. Jamieson, W. M., Prinsley, D. M. *Brit. med. J.* 1947, **ii**, 47.

ship. Williamson [6] heard a pleural rub in 7 of 13 cases, and Attlee et al.[7] in 17 of 48, whereas Fulghum [8] heard none in 28 cases, and most of the American observers have not heard one.

The importance of epidemic myositis is twofold: (1) it is very distressing to the patient, and a correct diagnosis will relieve the anxiety of both patient and physician; and (2) it often mimics serious abdominal disease [9] and has led to unnecessary abdominal operations.

Orient Steam Navigation Co., London, E.C.2. H. M. ROYDS JONES.

WAR

SIR,—Dr. Comfort has widened my thesis in an able and stimulating letter. War is a great destroying river to which many sources contribute. Much can be written about the part played by government—fanatical, corrupt, or complacent and indolent—by psychopaths in office and out of it, by social pressure and economic necessity and their psychological effects. In these articles I was concerned to emphasise and inquire into that vital contribution to war which does come from the minds of ordinary men. In my opinion too few of us have accustomed ourselves to looking into the glass and saying: "There goes a war-monger." It isn't easy to do!

It is very necessary to attach full weight to the peculiar horrors and madnesses of war, such as the pogroms and the bombings and their origins and release in the minds of clever men who lead us. But I am even more worried about the way the ordinary mind can be innocently fanned towards war (hot or cold) by leaders who, in a more healthy world, would have to relegate their energies to brisk journalistic invective.

In any study of periods of pre-war history I would pick out as a common factor the growing conviction on both sides that it is impossible to deal with the opposite side other than by force. Just before war breaks out this view seems to become so widespread as to be all but universal. I am fairly sure that this is in essence just that basic attitude to an enemy which has made the introduction of law a pragmatic necessity. Therefore, it is World Law that we now need.

As for government crimes, these are committed just in the very sphere in which the government has ceased to be the lawgiver to its people and has become the lawless and independent "sovereign State" for whose enchainment the ordinary man now awaits. I agree with Dr. Comfort that in this function governments are the enemies of mankind. Indeed it becomes reasonable to ask for a bloodless revolution against the "sovereign State" as such. But today evidence accumulates that some leading statesmen and publicists can see this dual rôle of the nation State—lawgiver at home, naughty-boy abroad—rather more clearly than can most ordinary men! When we belabour the psychopath in office do not let us forget that wisdom, courage, and idealism sometimes get into high places too.

We therefore ask national governments, as Hobbes once asked individuals, to "confer all their power and strength upon One Assembly" to "get themselves out of that miserable condition of Warre" which is consequent upon "the naturall Passions of men when there is no visible Power to keep them in awe." I for one do not see why governments and parliaments willing to abnegate their sovereignty should not be found sufficient in numbers and power to the task in hand—namely our collective peace and continuance.

Edinburgh. RANYARD WEST.

6. Williamson, B. *Lancet*, 1924, ii, 64.
7. Attlee, W., Amsler, A. M., Beaumont, D. C. *Ibid*, p. 492.
8. Fulghum, C. B. *J. med. Ass. Ga.* 1942, **31**, 63.
9. Goldstone, B. W., Le Marquand, H. S. *Lancet*, 1946, ii, 267.

PERSONALITY AND NURSING

SIR,—All the objections which Dr. Hamilton raises in his letter of March 11 are considered and discussed in the detailed statistical report of the investigation which is to be published in the *Journal of Consulting Psychology*. As *The Lancet* did not feel that such a statistical report would be of interest to any but very specialised readers, these points were not discussed in the article published, on Feb. 25, in this journal.

It is almost certain that these considerations would reduce the size of the multiple correlation to some slight extent. Both Vernon [1] and Wagner,[2] however, report results in related fields which would lead to a very small reduction, if any, in the size of the correlation. Moreover, the reduction of the multiple correlation is not such a simple phenomenon as readers of the letter might be led to believe. It is frequently reduced, especially when the selection of tests is based on no theoretical rationale; but there are many cases, particularly that of the American Army Aviation Project, where no such reduction was observed. The results of using tests on all applicants, for which facilities are now provided, will answer some of the other questions raised.

It is difficult to discuss these rather complex statistical points in an article of this type. We hope that they have been fully covered in the detailed statistical report.

St. Georges Hospital, London, S.W.1. ASENATH PETRIE
MURIEL B. POWELL.

EPIDEMIOLOGY OF POLIOMYELITIS

SIR,—During the epidemic of poliomyelitis in 1947, a few articles appeared in the medical press suggesting that fæcal pollution of the permanent way spread the disease. It was pointed out, however, that railway tracks were also a mode of communication between human beings, and consequently the idea of fæcal pollution rather than carriers was more or less ruled out. I suggest, however, that this mode of spread should be carefully reconsidered.

Reports on the epidemiology of poliomyelitis provide evidence that flies can carry the virus, and it appears that in our future efforts to prevent the spread of infection strong efforts should be made to secure the coöperation of the public in protecting foodstuffs, fruit, vegetables, and liquids from contamination by flies.

As is well known, American investigators (Paul and Trask) have demonstrated that the virus can be recovered with ease from the stools of patients with the paralytic and with the common abortive types of the disease. One convalescent harboured the virus in his intestinal tract for 125 days. The same investigators succeeded in isolating the virus from the sewage of urban communities in which poliomyelitis was epidemic; nineteen specimens collected from sewers in the vicinity of isolation hospitals in which cases of poliomyelitis were being treated, yielded the virus.

At a meeting of the Royal Society of Medicine in October, 1943, Dr. Robert Cruickshank stated: "The possibility of flies acting as vectors of the virus should be considered in view of the fact that American work had shown that the virus can be recovered from blow flies and green bottle flies with access to the fæces of acute and convalescent cases of poliomyelitis." Prof. H. J. Seddon remarked that in the war-time Malta epidemic flies were unduly prevalent; in the devastated areas there were quantities of garbage that could not be cleared away, as well as the sewage that was used for fertilising crops.

1. Vernon, P. E., Parry, J. B. Personnel Selection in the British Forces. London, 1949.
2. Wagner, R. *Personnel Psychology*, 1949, **2**, no. 1.

Kessel et al.[1] were able to isolate the virus from the stools and colon contents of patients and at autopsies within three weeks of the onset. Of 35 patients under 15 years of age, 40% yielded the virus; 22% of stools from patients with paralysis and 19% of stools from patients without paralysis yielded virus.

Horstmann[2] writes:

"The sudden burst of cases with the appearance of warm weather repeats itself again and again, and if summer comes early, so do epidemics. The first large epidemic in England in 1947 came in with unusually long and warm weather. Why does not the virus spread in winter as do other contact diseases? The virus is present in winter. Virus has been isolated from flies trapped during epidemics of poliomyelitis and from flies caught in clean surroundings where sanitary conditions have been excellent. . . . both flies and poliomyelitis flourish in summer; they may be an important link in the chain leading to poliomyelitis epidemics."

Francis et al.[3] proved that the virus from fæces of patients with poliomyelitis was actually taken up by flies and recovered by inoculation of rhesus monkeys. Kessel and his colleagues[1] isolated the virus from the stools of 20% of patients, but not once from 139 nasal washings. The virus has also been recovered from non-biting flies in the neighbourhood of infected persons.[4]

Thus the evidence indicates that the virus is probably present in the fæces of a large number of patients and abortive cases. To dispose of fæces in a primitive fashion along the permanent way is surely to court danger, especially during hot summer weather when flies are prevalent.

From the aspect of prevention I would emphasise the importance of measures to eradicate flies and remove their breeding-places. I would suggest that all public libraries should affix a small slip on the inside cover of each book, bearing the slogan in red capitals: "keep polio at bay—kill that fly." Other measures would include thorough washing of all fruit and vegetables before being eaten. The many excellent posters dealing with the anti-fly campaign issued by the Central Council for Health Education should also be prominently exhibited.

I am aware that I have covered old ground in this letter, but I feel that the obvious measures should not be neglected.

Health Department, Worksop, Notts. M. B. McCANN Medical Officer of Health.

PNEUMOCONIOSIS AFTER EXPOSURE TO SULPHUR DIOXIDE FUMES AND DUST FROM COKE FIRES

SIR,—First, may I remind Dr. Fisher that our paper of Dec. 31 described our conclusion as tentative? Secondly, I would suggest that he has misapprehended the problem we dealt with: otherwise he would not speak, as in his letter of March 11, of pneumoconiosis caused by coke ash. The report concerned lesions appearing after exposure to both SO_2 fumes and dust from coke fires. Thirdly, I should like to add two other facts in favour of our findings: (*a*) Professor Pancheri (Milan) has found (see *Lancet*, Feb. 4, p. 226) that "in the sulphur industry workers are exposed to both dusts and fumes with ensuing dyspnœa, cyanosis, bronchitis, emphysema, and even bronchiectasis." (*b*) The case of a stoker was recently brought to my notice by his own doctor after perusal of our paper. This man's chest film showed definite pneumoconiosis.

Hull. LASAR DUNNER.

1. Kessel, J. F., Moore, F. J., Stimpert, F. D., Fisk, R. T. *J. exp. Med.* 1941, **74**, 601.
2. Horstmann, D. M. *Lancet*, 1948, **i**, 273.
3. Francis, T. jun., Brown, G. C., Penner, L. R. *J. Amer. med. Ass.* 1948, **136**, 1088.
4. Paul, J. R., Trask, J. D., Bishop, M. B., Melnick, J. L., Casey, A. E., *Science*, 1941, **94**, 395.

Parliament

Health Service Costs

CHANCELLOR'S PROMISE OF LIMITATION

IN the House of Commons on March 14, replying to the Opposition's amendment which deplored the failure of the Chancellor of the Exchequer to enforce his own instructions to departments not to overspend extensively their estimates for the current year, Sir STAFFORD CRIPPS admitted that the supplementary estimate for the National Health Service was larger than all the others put together. But he justified the extra £98 million asked for on the ground that this was a very special case. The largest item, that for hospitals and specialists, was to supplement estimates which had been submitted by hospital management committees in August, 1948, when they had only recently been appointed and some had only skeleton staffs. Sufficient time had not elapsed for an adequate review of the hospitals, and in many cases no satisfactory accounts existed on which firm estimates could be based. With a view to making economies, or at least avoiding extravagances, the estimates were reduced by £12 million in the main estimates. But unfortunately it turned out that the management committees and regional boards had underestimated rather than overestimated their expenditure, and it became clear that the estimates could not be brought within the lower sum without closing hospital beds, which the Government were not prepared to do. The revised estimate produced on this basis gave rise to the increase of £50 million on the item hospital and specialist services. Some provision for the implementation of the Spens report on specialists had been made, but the sum to be paid in the current year exceeded this by £10 million. A further £7 million was needed to meet Whitley awards to nursing and other staff. The balance—about £20 million—was due partly to lack of material on which to make estimates and partly to increased prices.

The other three items of importance, Sir Stafford continued—pharmaceutical, dental, and supplementary ophthalmic services—showed between them an excess of about £45 million. Though there was an element in this of price change, by far the greatest factor was consumer demand, which had lasted much longer and at a much higher level than was expected. These were the special circumstances of the launching of this vast new service, and when these new factors were first encountered in the early summer of last year there were only two ways of dealing with the matter—either to shut down the beds and discontinue other services so as to keep within the estimates, or to maintain the services with the greatest possible economy. The Government unhesitatingly took the second alternative. He was quite sure that the Opposition leaders would have done the same thing. It would have been unthinkable for any responsible Government suddenly to discontinue these essential health services on the ground that a supplementary estimate was undesirable.

But everyone recognised that there was a limit to the speed of the development of the service, and he himself believed that it was now necessary to call a halt. The estimates for the forthcoming year must be regarded as a ceiling. Also, since such a large annual sum of money was at stake in the hospital services—about two-thirds of the total vote—some means must be found to associate the Ministry of Health more directly with the management committees and the regional boards to ensure that budgets were not exceeded once they were passed or savings on one subhead unnecessarily dissipated on another. How best this association could be achieved would be settled after the Minister had consulted the regional hospital boards and the management committees.

The Government would not be satisfied until the new service had been thoroughly examined in all its incidence, and so knitted together in its organisation as to ensure that there was no waste or extravagance. They wanted to provide the best health service the nation could afford, and a first-class service was not something which could be got on the cheap, but expenditure on health must be

brought into proper proportion with food subsidies, education, and other vital matters.

Mr. F. MESSER held that the implication of the Opposition's amendment was that the Minister should have restricted the service, but those facing great tragedy because of disease could not listen with equanimity even to what the Chancellor had said. There was need for a great deal more to be done, especially in the tuberculosis services. No fewer than 10,000 people were waiting to get into sanatoria. He would like to persuade Parliament to spend even more money on the health services. Another grave matter was that since the introduction of the service there was greater difficulty in getting accommodation for old people in hospitals. The hospitals had been up-graded, but the tendency was to use them for acute cases, which meant less accommodation for chronic cases. Hospitals were unfitted to be dealt with under the Treasury system of finance which did not allow them to carry an unexpended balance from one year into the next. Thus hospitals had no incentive to make effective economies, and Treasury finance could prove an inducement to wasteful spending.

In his maiden speech, Dr. CHARLES HILL affirmed that whatever controversies had raged in the past as to the form the health service should take, the people of the country were now anxious that it should be a resounding success. The Minister's difficulty was to reconcile local budget preparing at the hospital management committee level with central financial control, and Dr. Hill welcomed the Minister's decision in future to make allocations of money, not earmarked for particular hospital management committee, to regional hospital boards for allocation. Even so, with all possible central economies effected, it was impossible not to expect a substantial increase in hospital expenditure when it was remembered that the proportion of expenditure for capital development was only 5%. Looking at the problem in isolation he could see the prospect of increased expenditure—justifiable in relation to hospital considerations—of £100 million or even £200 million in the next few years. But if there was a limit to what could properly be raised and if such expenditure was a reasonable possibility, then we faced the crucial issue of the priority of social services in relation to limited resources. We must choose between hospitals and houses, between clinics and schools.

The one way of strengthening the hand of the Minister of Health was the predetermination of the money available for the health service. In the hospital service this would mean an annual allocation of money to regional hospital boards, and in turn to hospital management committees. It might have the further advantage that the public, recognising the limit to which the Chancellor referred, would return once more to their old and friendly supporting attitude towards the hospitals.

The principle of allocation already existed within limits in the general-practitioner field, and was one of the reasons for the more modest supplementary estimate that field. If the allocation principle was applied to the dental service it would be possible to give expression at last to the Government's policy of priority—the dental care of mothers and children.

The increase in the cost of the pharmaceutical services, Dr. Hill pointed out, was only due in part to an increase in the number of items of service. It was also due to the cost of the newer drugs, but they contributed to the service elsewhere by shortening periods of illness. He admitted that one cause of the increased cost was the pressure of the middle-classes for the proprietary medicines to which they were accustomed. But he hoped that the tendency to regard a large number of the lesser items demanded of the service, and of the doctors in particular, as frivolous would cease. The whole object was to bring to the doctor the trivial to prevent it becoming a tragedy.

Dr. BARNETT STROSS found himself in agreement with all that Dr. Hill had said, including his gentle regret at the terms meted out to the general practitioner, who bore the brunt of the service. It was fascinating to know that his average salary was £1530 a year, while his prescriptions cost £1700 a year. On the whole Dr. Stross thought the dentists had done a good job, but why could not the Minister make it a condition of service for the dentist to take a percentage of children?

Mr. IAIN MACLEOD found it indefensible that the dentists should be paid so much more than the doctors. Relative to their training, qualifications, ability, the responsibility that they ceaselessly shouldered, and the hours they worked, doctors were by far the worst paid profession in the service. It would be unwise to presume too far on their infinite and most statesmanlike patience.

Dr. H. B. MORGAN said the health service was a personal treatment scheme, and it was different from preventive medicine, social medicine, and industrial medicine. It was available to all on free and equal terms and therefore he disliked the system of priorities. He knew they were essential today for certain classes, such as mothers and children, but he wanted to see the day when there was no shortage of doctors or dentists, and no question of hospital accommodation not being available. He deprecated the introduction of parsimony into the question of the cost of the National Health Service.

Mr. SOMERVILLE HASTINGS said that in so far as the cost of the health service was new expenditure, that was surely an indictment of what had been done for the health of the nation in the past. What had been done was to transfer to a large extent individual expense and make it collective. Because of the value of our manpower, and the need to increase production, the country must spend on health all that was necessary, provided that it was done with care and economy. The fact that so much more could now be done for the welfare of patients and so many more recoveries were recorded, made expenditure on health today more worth while than it had ever been. He suggested that more should be done to keep hospital beds in constant occupation, for a staffed bed cost little more occupied than empty. Could not more use be made of the fever hospitals for convalescent cases? A bed bureau for a whole group of hospitals was essential and one doctor should have the duty of seeing that no beds were empty. If more full-time specialists were employed in hospitals there would be less travelling time to pay for. Some specialists at present were working in as many as 13 hospitals.

Mr. ANEURIN BEVAN, Minister of Health, caused some laughter by congratulating Dr. Hill on a maiden speech with which he was largely in agreement. The real point of the debate, he declared, was whether the Chancellor of the Exchequer and the Government were right in permitting the expansion of the health service to go on during the last year. We had to wait at least one year to see what the behaviour pattern of the people would be in respect of spectacles, dentistry, drugs, or doctors before it was possible to form the least estimate of what the expenditure would be. When hospital authorities were accused of maladministration members of all political parties who were serving on the management committees and regional boards were being indicted. He did not say there ought not to be a tightening of hospital administration; and there would be. There must be a closer identification of the central government with the local units of hospital administration. We had inherited a hospital system with no system of accountancy. Comparing costs in other countries he said that since 1946 hospital costs in the United States of America had gone up 40% and in Sweden 50%. The Royal Masonic Hospital and the King Edward VII Sanatorium were both outside the scheme, and their costs had risen 55·8% and 69·4%. In the N.H.S. costs rose by 40%.

But he agreed that economies ought to be made, and he believed savings could be made quickly in the cost of proprietary medicines, which had become part of the racket of civilised society. Take one preparation, 'Agarol' emulsion, six ounces of which cost 3*s*., on the N.H.S. list cost 10½*d*.; 'Genasprin,' 1*s*. 9½*d*., on the N.H.S. list 2½*d*.; 'Dexedrine' tablets 3*s*. 2*d*., on the N.H.S. list 9½*d*. All these preparations were widely advertised, and many doctors prescribed them. He hoped to get the coöperation of the profession, Parliament, and the public to cut out proprietary medicines which were unnecessarily expensive. They had had to get hospital glassware from Germany to break the monopoly in Great Britain. A large sum of

money had been saved in this way, even after paying import duty. On X-ray apparatus, by cutting out the retailer, £150,000 a year had already been saved, and on X-ray films £280,000 a year. On hearing-aids and batteries they had saved £1 1/3 million, and on streptomycin £240,000. In all, by cutting out retailers' costs they had saved over £2 1/3 million, and as the N.H.S. and the supply organisation established themselves, many savings would be made in various directions. The Opposition amendment was not only an attack on the Government but a concealed and cowardly attack upon the N.H.S. by people who had not the honesty to make it openly. The amendment was negatived by 308 votes to 289.

Therapeutic Social Clubs

On the motion for the adjournment in the House of Commons on March 17, Mr. J. W. SNOW sought the Minister of Health's encouragement for the promotion of more therapeutic social clubs. Briefly reviewing their history he explained that shortly before the war a small group of psychiatrists decided that purely institutional treatment was not a complete answer for mental illness. They thought it might be beneficial if they could provide a method of social intercourse such as a club, which would impose self-responsibility upon mental patients. This was the origin of the so-called inpatient club. Mental treatment in this country, Mr. Snow suggested, had passed through three periods: the primitive period, the more enlightened scientific or philanthropic period, and the present participatory period. Thus these clubs were organised by the patients themselves who became partners in the operation of treatment. Then the psychiatrists who had started the inpatient club thought an outpatient club might be something better. Now there were a number of these clubs operating outside the hospitals. In London the L.C.C. had given valuable help and he hoped the idea would spread to Scotland, Wales, and the provinces. The underlying principles of the clubs were prevention and cure. By their membership many patients avoided inpatient treatment and relapses. An eminent psychiatrist believed membership to be helpful to the following types of patient:

People who are abnormally reserved, solitary, and shy and who find it difficult to adapt themselves to a normal social life.

People who have had treatment at a mental hospital, such as a leucotomy operation, and who may need about a year's rehabilitation before they are completely fit.

People who are constitutionally unstable and who find it hard to fit into life but can be kept in their jobs with a minimum of psychiatric treatment and help.

Parents, as part of child guidance, might also join these clubs.

Mr. Snow urged the Minister of Health to make known the general principles underlying these clubs and their economic applications as a means of relieving congestion in the existing mental hospitals; and also to provide grants for research.

Mr. ARTHUR BLENKINSOP, parliamentary secretary to the Ministry of Health, said it was an encouraging fact that over 60% of the patients in our mental hospitals were voluntary patients. For some time mental hospitals had been developing the work of welfare clubs, both inside and, to a more limited extent, outside the hospital.

The clubs could be of immense value, particularly on the welfare and aftercare side—and indeed to some extent on the preventive side—but it would, he thought, be a mistake to over-emphasise their possibilities as an alternative to hospital or outpatient clinics. There was clearly some difference of opinion on this question between the medical experts who took the view expressed by Mr. Snow and those who took the view that the actual treatment side should be concentrated in hospital and outpatient clinics. That did not necessarily detract from the value of the work done by the clubs, but suggested that we were not likely to reduce greatly pressure on hospitals and outpatient clinics by the development of more clubs. So far we had little experience of the working of these clubs outside the hospital perimeter. The health authorities and the regional hospital boards were studying this problem both in London and elsewhere, but at the moment it was not possible to commit the Ministry of Health to any expenditure on these projects, or to guarantee that they could exert pressure on the local authorities or hospital boards. They felt that clubs arising naturally from the local health authorities and the regional hospital boards were more likely to be successful than any proposals originating nationally from the Ministry. He was, however, much interested in the proposals which had been raised and he could assure Mr. Snow that they would be given sympathetic consideration.

QUESTION TIME

Sterilisation

Mr. W. L. WYATT asked the Home Secretary whether his attention had been drawn to the case of a Mrs. Kindred who was put on probation in Birmingham on Jan. 27 after the bench had been informed that she had agreed to be sterilised; and whether he would set up a committee to inquire into the desirability or otherwise of amending the law with regard to sterilisation.—Mr. CHUTER EDE replied: I am informed that the court in deciding to put Mrs. Kindred on probation were not influenced by the information given to them that she was willing to be sterilised and that they made no reference to it in pronouncing their decision. Certain aspects of this question of sterilisation have already been considered by a Departmental Committee appointed by the Board of Control which reported in 1934. The general question of birth-control was considered by the Royal Commission on Population. It would not appear that any useful purpose would be served by setting up a further committee. Mr. WYATT: As the committee to which the Home Secretary referred strongly recommended that sterilisation should be legalised in certain cases, and as it is important that this should be done urgently, is it not time to consider introducing legislation to this end?—Mr. EDE: No, Sir. The matter is highly controversial and involves, I think, very serious infringement of the liberty of the subject. I am not prepared to introduce legislation.

Young Offenders

Replying to a question Mr. EDE stated: Provisional figures for the year 1949 for England and Wales showed that 24,872 boys and girls under the age of 14, and 15,064 aged 14 to 17, were found guilty of indictable offences and dealt with in magistrates' courts. The corresponding figures for 1948 were 26,715 and 16,991, and for 1947, 21,152 and 13,861. The decreases in 1949 as compared with 1948 were 1843 and 1927, or 7% and 11%.

Political Meetings in Hospitals

Mr. J. A. BOYD-CARPENTER asked the Minister of Health whether it was with his knowledge and consent that the South West Metropolitan Hospital Board issued instructions that parliamentary candidates were not to be allowed to address gatherings on hospital premises.—Mr. BEVAN replied: Hospital boards had discretion on this matter and my consent was not required. It is not possible to make a general uniform arrangement in this matter because of the difference in accommodation at different hospitals, and of the different kinds of hospitals. I therefore thought it was wise to leave it to those in charge, who could vary the practice with the needs of the case.

N.H.S. Prescription Charge

Mr. M. C. HOLLIS asked the Minister whether it was still proposed to proceed with the plan for charging 1s. on prescriptions; and if he had now decided what was the definition of a prescription.—Mr. BEVAN replied: I am not in a position to add anything to previous announcements on this subject. Lieut.-Colonel WALTER ELLIOT: When will the Minister be able to make any announcement on this subject and let us know when the Prime Minister's instructions are to be fulfilled?—Mr. BEVAN: This is a matter which will be assimilated in the Budget statement.

Shortage of School Dentists

Mr. BARNET JANNER asked the Minister of Education whether he was satisfied that sufficient numbers of dentists would now be available for schools throughout the country.—Mr. GEORGE TOMLINSON replied: No, Sir; in January last the school dental service employed the equivalent of 738 full-time dentists by comparison with 921 in 1948, when the service had fully recovered from the effects of the war. Although last year the net loss was very serious, there were nevertheless over 100 new entrants and I hope that the negotiations for a Dental Whitley Council now proceeding will lead to a settlement of salaries and the restoration of the service to its former efficiency.

Hospital Accommodation for the Chronic Sick

In answer to a question Mr. BEVAN stated that according to the latest information, which relates to the summer of 1949, there were 6114 chronic sick patients awaiting admission to hospital in England and Wales. In October, 1949, 5508 chronic sick beds were unoccupied for lack of staff.

Contributors to National Insurance

In answer to a question Dr. EDITH SUMMERSKILL, Minister of National Insurance, stated that in July, 1949, about 24 million persons had registered under the National Insurance Act. The total population of Great Britain aged 15 and over was about 38 million, but this figure included a considerable number of married women, pensioners, and others who are under no obligation to contribute.

Obituary

CHARLES MONTAGUE CHADWICK

M.A., D.M. OXFD, F.R.C.P.

Dr. C. M. Chadwick, consulting physician to Leeds General Infirmary, died at Tunbridge Wells on March 11 at the age of 96. He was elected to the fellowship of the Royal College of Physicians in 1896 and he was the third most senior fellow.

The association of the Chadwick family with Leeds General Infirmary goes back unbroken for over a hundred years, for his father, another Charles Chadwick, was physician there from 1842 to 1871. A fine portrait of him still hangs in the medical school. The younger Charles was educated at the University of Oxford and the London Hospital. After graduating B.M. in 1883 he continued his studies at the schools of Leipzig and Vienna. In 1892 he was elected assistant physician to the Leeds General Infirmary, and two years later he became full physician. He was also on the staff of the Leeds Public Dispensary. From 1896 to 1897 he was joint lecturer in forensic medicine in Leeds, and the following year he was appointed professor of materia medica, pharmacology, and therapeutics in the Victoria University, the precursor of the University of Leeds. He is still remembered as an excellent clinical teacher. He retired from all his appointments in 1905.

FRANK CUNINGHAME COWTAN

C.B., C.B.E., M.R.C.S.

Air Vice-Marshal F. C. Cowtan, who died at his home at Farnham on March 5 at the age of 61, was one of the men who in the first difficult days of the service gave substance to the medical branch of the Royal Air Force.

Born in Kensington, he was educated at St. Paul's School and St. Thomas's Hospital. After qualifying in 1912 he joined the R.A.M.C. and for his services in France and later in Mesopotamia during the 1914–18 war he was four times mentioned in despatches. In 1916 he was appointed D.A.D.M.S. to Sir Matthew Fell, who writes: "It was in Basra in the summer of 1916 that I first saw Cowtan when he came to replace my D.A.D.M.S. who was sick. I knew nothing of him personally, but in a very few days found that I had struck a winner. Medical administrative affairs up and down the Tigris were in a rather hectic state that year but Cowtan settled down at once. He was not afraid of hard work and his natural gift for administration and orderly mind were of immense help to me. From the first, I found him a delightful companion, and chuckled when he sometimes firmly but politely drew my attention to what he called 'your irregular methods, Sir.' Later when he came and told me that he would like to transfer from the R.A.M.C. to the new medical service of the Royal Air Force I was glad to do what I could to help him, for I knew what he was worth to the new service in its infancy."

This led to Cowtan's appointment as medical training officer at Halton with the rank of squadron-leader.

In his new service he rose steadily. From 1926 to 1928 he was deputy P.M.O. in Iraq. A period of staff duty at the Air Ministry followed, till he was appointed to the command of Princess Mary's Hospital at Halton. While he was P.M.O. of Middle East command he was invalided home, and the beginning of the late war found him as P.M.O. Coastal Command. In 1943 he held the same appointment to Fighter Command, and he was appointed C.B. In 1944, as P.M.O. to SHAEF he took part in organising the medical arrangements for D-day. His last appointment was P.M.O. to Bomber Command and he retired in 1945 owing to ill health. He was appointed C.B.E. the following year. From 1941 to 1945 he was honorary surgeon to the King.

A colleague writes: "All who have had the happy experience of associating with Cowtan recall a man of steady purpose, of well-judged approach to all problems, deep loyalty, and love of country. His example in correctness of dress and bearing are clearly remembered."

In 1915 he married Miss Nora Kennedy. She survives him with a son and a daughter.

HAROLD FREIZE STEPHENS

M.R.C.S.

Dr. Freize Stephens, formerly medical superintendent of Coleshill Hall Institution for Mental Defectives, Birmingham, died on March 9 at his home at Coleshill.

He was born in 1885 in Madras, where his father, Daniel Freize Stephens, was on the staff of the Public Works Department, and his mother, Dr. Grace Stephens, was physician to the Maharanee of Gwalior.

After qualifying from Guy's Hospital in 1912, he joined the staff of the Royal Earlswood Institution. In 1916 he went abroad to serve in France, Iraq, and Persia as a regimental medical officer, later becoming consultant in mental diseases to the Northern Command, India. In 1922 he became deputy medical superintendent at the Manor Hospital, Epsom, and he spent the rest of his life working among mental defectives. His gifts for organisation received a wider scope when in 1929 he was appointed medical superintendent of the newly opened Coleshill Hall Institution for Mental Defectives, founded by the corporation of Birmingham.

During the next twenty years Coleshill Hall increased under his administration from an institution with 300 beds to one with over 1000. Many of the senior members of his staff remained with him through the whole of his superintendentship. In 1937 the converted and modernised public-assistance institution known as the Marston Green Homes was opened as a branch of Coleshill Hall, and later up-to-date workshops for the teaching of handicrafts and trades, and three modern pavilions for young children, were set up. The system of daily employment of men and women patients outside the institution was extended. J. C. R. writes: "In his scheme of training, Dr. Freize Stephens gave an important place to physical exercises, organised games, and Scout and Guide work, and the annual sports days and the holiday camps were outstanding examples of his cult of open-air training and his belief in the importance of the team spirit. Optimistic and progressive, he was inspired by the belief that his duty lay in restoring as many as possible of his patients to their places in the outside world, and to this end he increased the scope of parole and of licence. In every aspect of his work he continued to impress the stamp of a forceful personality. Despite his failing health he kept his enthusiasm and his unsparing energy to the last, and he was planning fresh advances, when his final illness forced him to retire."

A man of many interests and activities, he was often consulted when other colonies for mental defectives were being planned. At the time of his death, he was chairman of the Northern and Midland division of the Royal Medico-Psychological Association, and he had served on several of the subcommittees of the association. He also did much work for the Mental Health Association.

In the reports of the National Council on Mental Hygiene (1926–27) he wrote on the causes of mental disorder, and he had also contributed to our columns papers on the treatment of persistent offenders and on research in mental deficiency. His series of articles on the nursing of mental defectives is appearing at present in the *Nursing Mirror*.

Dr. Freize Stephens leaves a widow and three sons, of whom the eldest is a medical officer of the Colonial Medical Service in Northern Rhodesia, the second a medical student, and the third a lieutenant in the Royal Navy.

Notes and News

HOSTELS FOR COMMONWEALTH AND AMERICAN STUDENTS

SINCE 1940 our kinsmen and friends in the Commonwealth and in the United States have sent us £80 million worth of food gifts, including 75 million parcels sent as gifts to people in this country and 130 million lb. through the Commonwealth Gift Centre to schools, hospitals, almshouses, and so on. Now we are to be given a chance to show our gratitude for their kindness through the National Thanksgiving Fund which the Lord Mayor of London has opened. The proceeds of the fund are to be used chiefly to develop a centre in London for Commonwealth and American students. The plan is to erect an £800,000 building for married and women students on the opposite side of Mecklenburgh Square to London House, a residential hall for men students from the Commonwealth; this will be close to the main London University buildings, the Inns of Court, the British Museum, and the great teaching hospitals. It is also planned to reconstruct the Georgian houses on the east side of the square for men students from America at a cost of £250,000 and to set aside £600,000 for the upkeep and maintenance of these two buildings and of London House. A further £150,000 will go to the overseas students' hall in Scotland, at Edzell in Angus. If the fund proves big enough £200,000 will be shared between the Royal Empire Society, the Victoria League, the Overseas League, the Dominions' Fellowship Trust, and the English-Speaking Union to help them in their work for students and other visitors from overseas.

To carry out this plan, about £2 million in all will be needed. Donations should be sent direct to the Lord Mayor of London, The Mansion House, London, E.C.4, marking the envelope National Thanksgiving Fund, or handed in at any bank or post office.

FOOD IN THE EARLY YEARS

GOOD feeding is a pleasure at any age. Between the ages of 1 and 5 it is a duty as well. In 1942 the Ministry of Health published a pleasant booklet designed to help those in charge of groups of young children "to plan and prepare balanced, attractive and varied meals." A revised edition[1] has now been issued, in which the recipes make use of the greater variety of foodstuffs which have become available since the first appeared. The text gives general advice on the feeding of preschool children, and on their emotional as well as their nutritional needs. They dislike sloppy dishes, and they like food to look agreeable. They enjoy helping to get a meal ready, handing round the vegetables, and helping themselves with a spoon from the dish. They prosper when meals come regularly, when they have been active in the fresh air before meal times, when dining conditions—and the adults in charge—are peaceful and pleasant. Overtired and flustered adults do not encourage good digestion. This matters, for the alimentary tract is adept at forming habits, whether good or bad.

University of Oxford

The vice-chancellor has appointed Dr. Alice Stewart, deputy director of the Institute of Social Medicine, to carry on the duties of the professorship of social medicine for Trinity term, 1950.

Prof. H. E. Sigerist, formerly director of the Institute of the History of Medicine, Johns Hopkins University, will deliver the James Bryce lecture on Thursday, June 1, at Somerville College. He is to speak on the Latin Medical Literature of the Middle Ages.

University of London

The title of fellow of University College has been conferred on Dr. Charles Singer, professor emeritus of the history of medicine in the university.

Mr. H. J. Eysenck, PH.D., has been appointed to the readership in psychology, with special reference to psychiatry, tenable at the Institute of Psychiatry.

University of Sheffield

Dr. S. E. Dicker has been appointed lecturer in physiology.

1. The Feeding of Children from One to Five Years. London: H.M. Stationery Office. 1949. Pp. 16. 6d.

University of Manchester

On May 17 the honorary degree of D.SC. is to be conferred on Mr. V. E. Negus, and on Lord Boyd-Orr, F.R.S.

University of Leeds

Dr. Georgiana Bonser and Dr. L. L. Dmochowski, who are at present lecturers in the department of experimental pathology and cancer research, have been appointed readers in cancer research.

University of Edinburgh

During the summer term Dr. Douglas Guthrie, lecturer on the history of medicine, will deliver a series of lectures entitled a Retrospect of Medicine and Science. The lectures will begin on April 18 and they will be held at the University New Buildings, Teviot Place.

Scottish Conjoint Board

On March 16 the following were admitted to the licentiateship of the Royal Colleges of Physicians and Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow:

Audrey J. J. Abel, Maureen M. Aylmer, John Bonner, R. F. Caddell, Harry Coll, Maureen Coneghan, Phyllis Connor, J. H. A. Craig, B. K. A. Crawford, D. McD. Cruickshank, Margaret S. Curley, S. I. Davidson, G. S. Fiddler, J. A. Fleming, W. G. French, Emily A. Friel, R. A. Gelfer, Iona J. Godson, Philippa D. Harrison, D. M. Hesslegrave-Jackson, Robert Hogg, Leslie Huddlestone, R. A. Ingles, T. F. McC. Jackson, Mary W. A. Jamieson, R. G. Kibbey, A. W. Laing, Claude Langman, Charles Lipp, W. R. McKenzie, H. D. Malasky, Margaret McN. Montgomerie, D. G. Muldoon, Mary H. Murray, Wilma Nield-Faulkner, Charles Randall, Louis Robinson, H. L. Sandler, Sat Dev Sethi, Ellis Sopher, F. C. Van-Coller, John White, G. C. Wilson, Eileen M. Wolstenholme, Harold Woolfson.

Faculty of Anæsthetists

Dr. John Gillies will deliver the second Joseph Clover lecture at the Royal College of Surgeons, Lincoln's Inn Fields, London, W.C.2, on Wednesday, March 29, at 5 P.M. He is to speak on Anæsthetic Factors in the Causation and Prevention of Excessive Bleeding during Surgical Operations.

Society of Chemical Industry

The annual general meeting of the food group will be held on Wednesday, April 12, at 6 P.M., at Burlington House, London, W.1. At 6.30 P.M. Prof. S. Zuckerman, F.R.S., will give an address on Pounds, Dollars, and Calories.

Cardiology Congress

The first International Congress of Cardiology is to be held in Paris from Sept. 3 to 9. It is being organised by the Société Française de Cardiologie. The secretariat may be addressed at 19, rue Hautefeuille, Paris, VI.

International Congress of Dermatology

The tenth International Congress of Dermatology will be held in London during the summer of 1952, under the presidency of Sir Archibald Gray. Further information may be had from Dr. G. B. Mitchell-Heggs, Institute of Dermatology, St. John's Hospital for Diseases of the Skin, Lisle Street, Leicester Square, London, W.C.2.

Newsholme Lectures

Sir Henry Cohen will give the first Newsholme lectures at the London School of Hygiene, Keppel Street, W.C.1, on May 22, 23, and 24 at 6.15 P.M. He has chosen as his subject the Clinical Contribution to Public Welfare. The lectureship was created by the late Sir Arthur Newsholme, under a trust, and he laid down the following range of subjects: the application of anatomical and physiological teaching to the maintenance of health; the application of clinical teaching to the prevention of illness as it affects the hospital patient; and the effective curtailment of and recovery from illness.

Sheffield Regional Pædiatric Conference

The second regional pædiatric conference was held on Feb. 25 at the Children's Hospital in Sheffield. Dr. J. Lorber spoke on the Circulation of C.S.F. in Tuberculous Meningitis, and Dr. S. Doxiadis on Allergic Inflammations. Dr. C. Harvey, gave a survey of Congenital Heart Lesions in a School Health Service, and Dr. J. Emery illustrated the histological characteristics of the normal maturation of the pancreas in the child. At the end of the meeting Prof. R. S. Illingworth showed a film on the Development of Locomotion in Infancy.

Institute of Sociology

At a meeting to be held at Burlington House, W.1, on Tuesday, March 28, at 5.30 P.M., Mr. Geoffrey C. Tyndale, K.C., will speak on Children in the Divorce Court.

Postgraduate Course in Rheumatism

The Empire Rheumatism Council are holding their spring weekend course at the Apothecaries' Hall, Black Friars Lane, London, E.C.4, from April 28 to 30. Further particulars may be had from the secretary of the council, Tavistock House (N), Tavistock Square, W.C.1.

Hunterian Society

The Hunterian prize for 1949 has been awarded to Dr. S. M. Rivlin for his essay on the Treatment of Varicose Veins and their Complications. The council have chosen as the subject for the 1950 essay the Diagnosis and Treatment of Irritating Rashes. The competition is open to all general practitioners. Further details may be had from the hon. secretary, Mr. Clement Francis, 75, Wimpole Street, London, W.1.

Fellowships in Cancer Research

The British Empire Cancer Campaign invites applications for senior fellowships, tenable for seven years with a salary of £2000 rising to £2600, and for junior fellowships, tenable for three years, with a salary of £1000 rising to £1200. Further particulars will be found in our advertisement columns.

Medal in Dermatology

The examination for the Chesterfield medal will be held at the Institute of Dermatology, St. John's Hospital for Diseases of the Skin, Lisle Street, London, W.C.2, on Monday, Tuesday, and Friday, April 17, 18, and 21. Further particulars may be had from the secretary of the institute.

Wessex Rahere Club

The spring dinner of this club, which is open to all Barts men living in the south-west of England, will be held at the County Hotel, Taunton, on Saturday, April 29. Mr. J. B. Hume will be the guest of honour. Further information may be had from the secretary, Mr. A. Daunt Bateman, 3, The Circus, Bath.

Association of Hospital Launderers

It is proposed to form an association for hospital laundry managers. Those interested are asked to get in touch with Mr. G. E. Beckett, laundry adviser to the South-Western Regional Hospital Board, who may be addressed at the laundry department of the Bristol Royal Hospital, Royal Infirmary Branch, Bristol, 2.

Course on B.C.G.

A course for doctors on Tuberculosis in Children and the Use of B.C.G. is being held at St. Thomas's Hospital Medical School, London, S.E.1, from April 18 to 21. Sir Robert Young will give the opening address, and other speakers will include Dr. B. G. Thompson, Dr. W. L. Yell, Dr. A. E. Brown, Dr. Marcia Hall, Prof. Frederick Heaf, Dr. K. Neville Irvine, Dr. Wilfrid Sheldon, Mr. J. A. Chomeley, and Dr. F. J. Bentley. Further information may be had from the secretary of the Tuberculosis Educational Institute, Tavistock House North, Tavistock Square, W.C.1.

N.A.P.T. Essay Prize

The National Association for the Prevention of Tuberculosis is offering a prize of 100 guineas for an essay on the improvement of the control of tuberculosis throughout Britain. The competition is open to doctors of ten years' standing who are working as tuberculosis officers, chest physicians, or sanatorium medical superintendents in the United Kingdom. The competition is open until March 1, 1951, and further details can be had from the Secretary-general, N.A.P.T., Tavistock House North, Tavistock Square, London, W.C.1.

Peckham Health Centre Appeal

The members of the centre, which closed a week ago, have formed themselves into an association and have issued an appeal for assistance in establishing the centre as an institute of human biology and so continuing the Peckham experiment. The association asks for money so that the centre may reopen before the specially trained staff find employment elsewhere. Donations should be sent to the appeals secretary, Mrs. E. Purser, 1, Belfort Road, London, S.E.15.

Medical Art Society

The annual exhibition of the society will be held at Walker's Galleries, 118, New Bond Street, London, W.1, from April 17 to 29. The annual dinner will be held at Kettner's Restaurant at 7 P.M. on April 17. Further particulars may be had from the hon. secretary, Dr. Henry Wilson, 142, Harley Street, W.1.

Hospitals Renamed in Liverpool Region

At a meeting on March 2, the Liverpool Regional Hospital Board agreed that the names of institutions should be changed as follows: City Hospital East, Liverpool, to Rathbone Hospital; Green Lane Isolation Hospital, Ormskirk, to Ormskirk Children's Hospital; Fazakerley Sanatorium to Aintree Hospital; and Barrowmore Sanatorium to Barrowmore Hospital.

International Cancer Congress

The fifth International Cancer Congress will be held in Paris from July 15 to 22, at the time of the commemoration of the 50th anniversary of the discovery of radium by Pierre and Marie Curie. The work of the congress will be divided into three main sections: biology and experimental work; pathological, clinical, and therapeutic aspects; and social medicine. Further information may be had from the secretariat, Union Internationale contre le Cancer, 6, Avenue Marceau, Paris, VIII.

Maternity Services in Northern Ireland

Dame Dehra Parker, the minister of health and local government, is to set up a health advisory committee on maternity services as she considers that maternity services in Northern Ireland should be reviewed by people with first-hand experience. This announcement followed a motion by the Opposition urging the minister to bring the law relating to midwives into line with the Midwives Act, 1936, in England. The minister said she had every sympathy with the terms of the motion, and had decided that steps must be taken to put the midwifery services on a full-time footing.

International Federation of EEG Societies

This federation was founded, in the form of an international committee, at the international meeting held in London in 1947. A tentative organisation was set up, with the international journal *Electro-encephalography and Clinical Neurophysiology* as its official organ, and two working committees were formed—one on technique and another on terminology. At the Paris meeting last year a more formal organisation was established with a legal constitution in close liaison with UNESCO. The official title of the new body is the International Federation of Electro-encephalography and Clinical Neurophysiology. The following officers were elected and will hold office until the third International Congress, to be held in the United States in 1952: honorary president, Prof. E. D. Adrian, O.M.; president, Dr. Herbert H. Jasper; vice-presidents, Dr. Robert S. Schwab, Mr. W. Grey Walter, D.SC., Dr. Fritz Buchtal; treasurer, Dr. Antoine Rémond; and secretary, Dr. Henri Gastaut, 149, Prom. de la Corniche, Marseilles, France.

Royal Society

The list of those appointed to the fellowship includes: Prof. B. P. BABKIN, M.D., D.SC., physiologist, McGill University, Montreal, for his work on secretion by the digestive tract and conditioned reflexes; W. J. ELFORD, PH.D., biophysicist, National Institute for Medical Research, London, for his researches on viruses, particularly on methods of determining virus size; C. A. HOARE, D.SC., protozoologist, Wellcome Laboratories of Tropical Medicine, London, for his work on parasitic protozoa, especially the trypanosomes; A. J. P. MARTIN, M.A., PH.D., biochemist, National Institute for Medical Research, for his work on the development of liquid-liquid partition chromatographic methods of chemical analysis; R. A. MORTON, D.SC., professor of biochemistry, University of Liverpool, for his studies on the chemistry and biochemistry of the fat-soluble vitamins; R. J. PUMPHREY, PH.D., professor of zoology, University of Liverpool, for his researches on the sense organs and central nervous system of animals, particularly for his work on hearing in insects and man; Prof. H. E. SHORTT, C.I.E., M.D., D.SC., head of the department of parasitology, London School of Hygiene and Tropical Medicine, for his work on protozoal diseases; R. L. M. SYNGE, PH.D., biochemist, Rowett Research Institute, Aberdeenshire, for his application of the principle of partition chromatography to the separation of amino-acids and peptides.

Royal College of Physicians

Dr. B. T. Parsons-Smith, will deliver the Lumleian lectures on Tuesday and Thursday, April 11 and 13, at 5 P.M., at the college, Pall Mall East, S.W.1. His subject is to be Cardiac Failure.

London Cinchona Bureau

Sir Philip Manson-Bahr has been appointed director of the bureau at 10, Princes Street, London, S.W.1. The post was formerly held by the late Prof. C. A. Bentley.

London County Medical Society

A clinical meeting of this society will be held at St. Nicholas' Hospital, Tewson Road, Plumstead, S.E.18, on Monday, April 17, at 3 P.M. Inquiries should be sent to the hon. secretary, Mr. J. Gabe, F.R.C.S., St. Alfege's Hospital, S.E.10.

Infantile Paralysis Fellowship

The fellowship has bought the Lantern Hotel at Worthing. It is not to be used as a convalescent home but as a seaside hotel for people with infantile paralysis, and it is to be specially adapted to meet their needs.

Presentation to Mr. Mullally

Members of the staff of the Hospital of St. John and St. Elizabeth and colleagues of Mr. G. T. Mullally met on March 15 to present him with an illuminated address, a barometer, and a cheque. He is retiring after nearly 30 years' service on the staff of the hospital.

Jamieson Memorial Fund

At the suggestion of a group of his former colleagues in Leeds, a Jamieson Memorial Fund has been instituted in memory of John Kay Jamieson, for many years professor of anatomy and dean of the faculty of medicine in the University of Leeds. The fund is administered by a representative committee, and subscriptions have been invited from former students of the university who were taught by Professor Jamieson, as well as from old friends and colleagues. It is proposed to found a scholarship or prize with which Professor Jamieson's name will be associated. The fund will close on April 30.

Appointments

ALDRIDGE, J. S., M.R.C.S.: asst. county M.O., Devon.
BICKNELL, FRANKLIN, D.M. Oxfd, M.R.C.P.: physician to outpatients, French Hospital and Dispensary, London.
BORTHWICK, J. B., M.B.E., M.B. Edin., F.R.C.P.E.: asst. physician to Scottish Borders hospital group.
CRONIN, J. D., M.B. Lond., F.R.C.S.: orthopædic surgeon, French Hospital and Dispensary, London.
DICKSON, MARY, M.R.C.S., D.P.H.: asst. M.O. for maternity and child health services, County of Northampton.
DIMSDALE, HELEN, M.D. Camb., F.R.C.P.: consultant neurologist, Royal Free Hospital, London.
FRANK, J. R., M.B. Edin., F.R.C.S.E.: assistant surgeon to Scottish Borders hospital group.
GREENWOOD, J. M., M.D. Manc., D.P.H.: consultant physician in charge of chronic sick wards at Newholme and Withington Hospitals, Manchester.
HOWARD, STANLEY, M.B. Lpool: senior asst. M.O.H. for City of Bradford in connection with the care and aftercare scheme.
KEITH, A. M., M.B. Aberd., F.R.F.P.S., F.R.C.S.E.: consultant orthopædic surgeon, Royal Alexandra Infirmary, Paisley.
LANCASTER, GEOFFREY, M.B. Manc.: appointed factory doctor for Ambleside district.
LAND, F. T., M.B. Glasg., F.R.F.P.S., D.L.O.: consultant surgeon in charge of E.N.T. Hospital, Glasgow.
MACALISTER, C. L. O., M.B. St.And., F.R.C.S.E.: consultant in genito-urinary surgery mainly at hospitals in No. 15 (Bradford A) hospital management committee group.
MCEWAN, TOM, M.D. Glasg., F.R.F.P.S.: consultant physician as second asst. physician (physician to the outpatient dept.), Royal Infirmary, Glasgow.
MAYER, A. L. R., M.B. Glasg.: chief M.O., National Sanatorium, Benenden, Kent.
RAFTERY, J. D., D.PHIL. Oxfd, B.SC. Witw'srand, F.R.C.S.: asst. visiting orthopædic surgeon, Addington Hospital, Durban, S. Africa.
VALENTINE, A. A., M.B. St.And.: psychiatrist (S.H.M.O.), Royal Scottish National Institution, Larbert.
VALENTINE, G. H., M.B. Brist., M.R.C.P.: consultant pædiatrician, Peterborough area.

Liverpool Regional Hospital Board:

CONROY, P. B., M.R.C.S., D.A.: consultant anæsthetist, hospitals in North Liverpool and adjoining areas.
DAVIDSON, J., M.B., D.A.: whole-time consultant anæsthetist, hospitals in North Liverpool and adjoining areas.
EGAN, G. P., M.D. N.U.I., D.P.M.: consultant deputy superintendent, Rainhill Hospital.
LIPTON, SAMPSON, M.B. Lpool, D.A.: consultant anæsthetist, hospitals in North Liverpool and adjoining areas.

Diary of the Week

MARCH 26 TO APRIL 1

Monday, 27th

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C.2
5 P.M. Mr. R. T. Johnson: Carotid Ligation for Intracranial Aneurysms.

Tuesday, 28th

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, W.C.2
5 P.M. Mr. A. K. Monro: Abnormalities of the Cutaneous Circulation in the Lower Limb.

Wednesday, 29th

ROYAL COLLEGE OF SURGEONS
5 P.M. Dr. John Gillies: Anæsthetic Factors in the Causation and Prevention of Excessive Bleeding during Surgical Operations. (Clover lecture.)
MEDICAL RESEARCH COUNCIL
10 A.M. (London School of Hygiene, Keppel Street, W.C.1.) Prof. A. Bradford Hill, D.SC. 2 P.M. Prof. J. R. Squire, Dr. Alice Stuart: Scientific Method in Field Surveys.
INSTITUTE OF PSYCHIATRY, Maudsley Hospital, S.E.5
4.30 P.M. Dr. E. Stengel: Postgraduate lecture-demonstration.
ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE, 28, Portland Place, W.1
3.30 P.M. Dr. C. A. Boucher: Accident Prevention in the Home.
UNIVERSITY OF GLASGOW
8 P.M. (Department of Ophthalmology.) Dr. T. Wilson: Modern Methods of Investigation.

Thursday, 30th

MEDICAL RESEARCH COUNCIL
9.30 A.M. Sir Frederic Bartlett, F.R.S., 2 P.M., Prof. W. E. Le Gros Clark, Mr. T. Bedford, D.SC.: Improvement of Human Performance by Laboratory Studies.
WESTMINSTER MEDICAL SCHOOL, S.W.1
5.30 P.M. (Meyerstein lecture-theatre.) Clinicopathological meeting on two cases of Hodgkin's Disease complicated by Tuberculosis.
INSTITUTE OF DERMATOLOGY
5 P.M. Dr. H. Gordon: Pitfalls in Treatment.

Friday, 31st

MEDICAL RESEARCH COUNCIL
9.30 A.M. Dr. Donald Hunter, Dr. J. M. Barnes. 2 P.M., Dr. C. M. Fletcher: Investigation of Health Hazards.
MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES
8 P.M. (11, Chandos Street, W.1.) Dr. A. R. Martin: Principles of Penicillin Therapy.

Births, Marriages, and Deaths

BIRTHS

BARTLEY.—On March 17, at Poole, the wife of Dr. Christopher Bartley—a son.
BLAKELOCK.—On March 16, at Lincoln, the wife of Dr. L. H. Blakelock—a daughter.
CALDER.—On March 11, at Windsor, the wife of Dr. Alan Calder—a son.
CHANCE.—On March 12, in London, the wife of Dr. Ivor Chance—a daughter.
FOXELL.—On March 12, at Southampton, the wife of Dr. Alan Foxell—a son.
GRETTON-WATSON.—On March 9, in Chester, the wife of Dr. B. G. Gretton-Watson—a daughter.
HALE.—On March 13, in London, the wife of Dr. John Hale—a son.
HALL.—On March 14, at Northampton, the wife of Dr. R. N. Hall—a son.
LITTLE.—On March 14, at Bristol, the wife of Dr. Brian Little—a son.
MOONEY.—On March 14, in Manchester, the wife of Dr. Terence Mooney—a son.

MARRIAGES

BRACEWELL—YATES.—On March 11, in London, Graham Acton Bracewell, M.B., to Pamela Margaret Yates.
FORBES—GRUBERT.—On March 15, in Berlin, Duncan Forbes, M.B., captain, R.A.M.C., to Susanne Grubert.
MACKENZIE—ANDERSON.—On March 11, in Glasgow, Ian Carville Keith Mackenzie, M.B., to Anthea Mary Anderson.
SMITH—TURNER.—On March 18, at Bishop's Stortford, Irvine Smith, M.A., F.R.C.S., to Kathleen Turner, M.B.

DEATHS

CHADWICK.—On March 11, at Tunbridge Wells, Charles Montague Chadwick, M.A., D.M. Oxfd, F.R.C.P., aged 96.
CURWEN.—On March 15, at Hove, Eliot Curwen, M.A., M.B. Camb., F.S.A., aged 84.
DINGLEY.—On March 16, at Myddle, Salop, Lionel Alfred Dingley, M.D. Lond., F.R.C.S., aged 61.
FEARNHEAD.—On March 11, Thomas Fearnhead, M.R.C.S., of Lytham, aged 83.
KELLY.—On March 12, at Hanchurch, Stoke-on-Trent, Peter Kelly, M.B. Glasg.
LANE.—On March 16, at Eastbourne, Gordon Joseph Lane, M.D. Dubl.
SPRAGUE.—On March 11, Cecil Gordon Sprague, M.R.C.S., surgeon captain, R.N. retd.
STEVENSON.—On March 16, in Belfast, Howard Stevenson, B.A., M.B. R.U.I., F.R.C.S.I.
WARD.—On March 11, at Rochampton, Arthur Blackwood Ward, C.B.E., D.S.O., M.B. Camb., aged 79.

WORKERS WITH MINOR INJURIES

THE PRINCIPLE OF "THROWING" pottery remains the same as in Biblical times. But now-a-days the potter's wheel is propelled by an electric motor. Throughout the day the potter's hands are covered with soft clay; the possibility of injury is heightened by mechanisation. Cuts and minor injuries have to be protected without interference with work.

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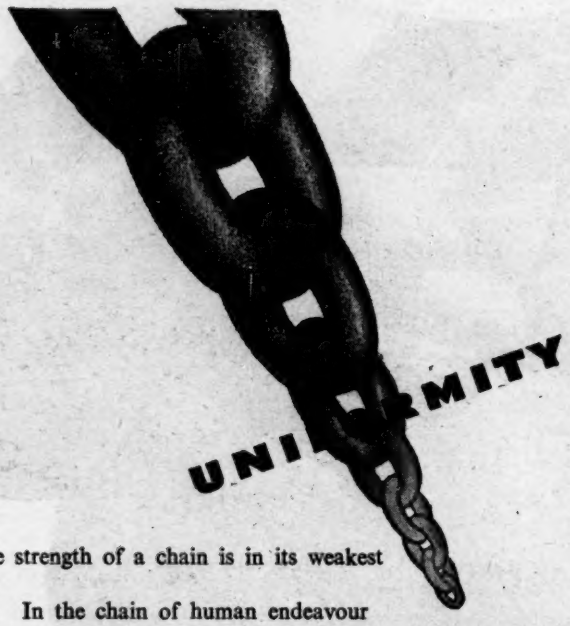

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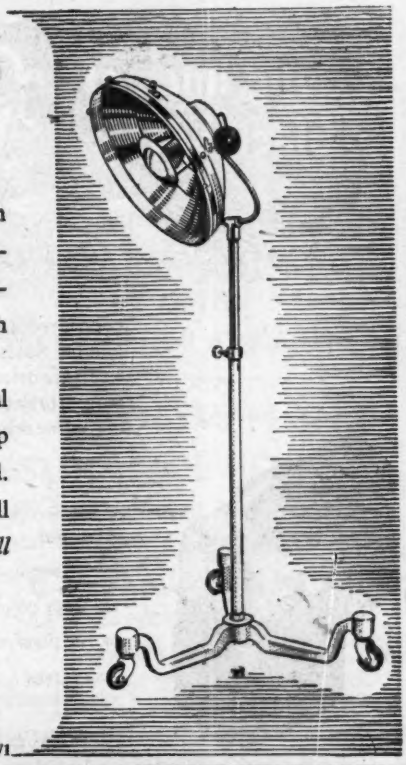

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References: Lancet, 1944, 247, pp. 175 and 176 British Medical Journal: 1946, 1, p. 50 Pharmaceutical Journal: 1945, 155, p. 245.

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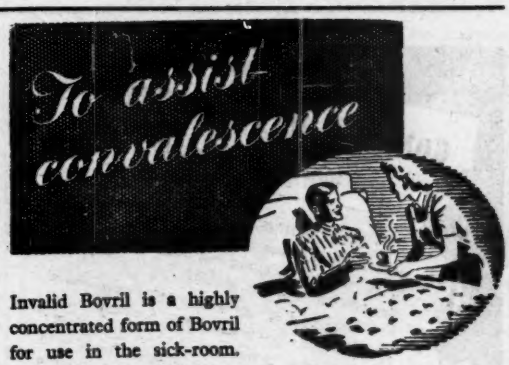

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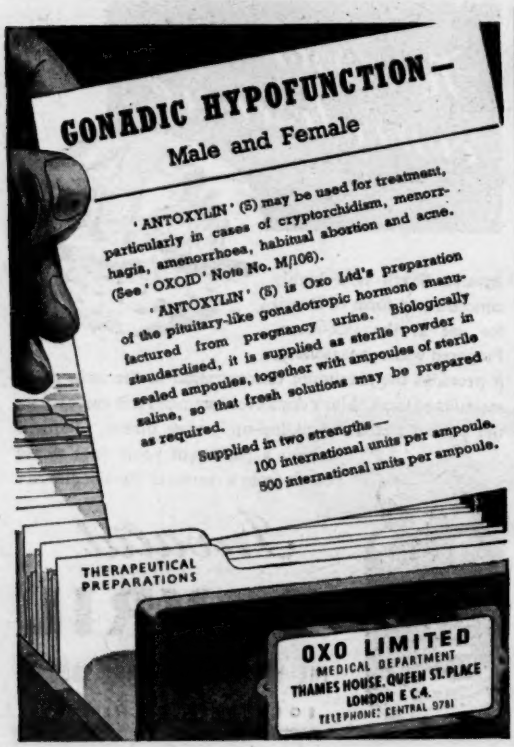
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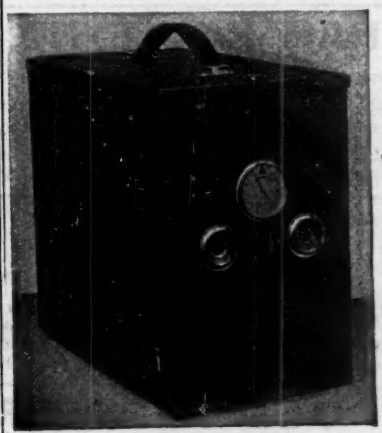

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For terms and further particulars apply to the Medical Superintendent (TELEPHONE: Northampton 4354 (3 lines)), who can be seen in London by appointment.

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Further details may be obtained on application to—

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Applications for admission or further inquiries to be directed to the Dean of the Faculty of Medicine before 31st May, 1950.

23rd February, 1950. STANLEY DUMBELL, Registrar.

UNIVERSITY OF SHEFFIELD

Courses of Instruction for the DIPLOMAS IN MEDICAL DIAGNOSTIC RADIOLOGY (D.M.R.D.) and THERAPEUTIC RADIOLOGY (D.M.R.T.) will commence in OCTOBER, 1950. The Diagnostic Course will cover a period of 18 months and the Therapeutic Course a period of 2 years of whole-time study.

The fee for either course is 50 guineas.

Applications to attend should be sent to the Dean of the Faculty of Medicine, The University, Sheffield, 10.

EMPIRE RHEUMATISM COUNCIL

The Spring week-end course will be held at The Apothecaries' Hall, Black Friars-lane, Queen Victoria-street, E.C.4 (Blackfriars Tube Station), on FRIDAY, SATURDAY, and SUNDAY, 28TH, 29TH, and 30TH APRIL, 1950.

POSTGRADUATE COURSE

Friday, 28th April

4.30–5.30 P.M. .. The Differential Diagnosis of "Rheumatism."
Sir ADOLPHE ABRAHAMS, O.B.E., F.R.C.P.

5.30–6.30 P.M. .. Gout.
GEORGE GRAHAM, Esq., F.R.C.P.

Saturday, 29th April

10–11 A.M. .. Fundamentals in the Treatment of Arthritis.
J. J. R. DUTHIE, Esq., F.R.C.P.E.

11.15 A.M.–12.15 P.M. .. Applied Physiology of the Adrenals.
P. M. F. BISHOP, Esq., D.M.

2–3 P.M. .. .. The Pathology of the Rheumatic Diseases.
D. H. COLLINS, Esq., O.B.E., M.D.

3–4 P.M. .. .. Rarer Arthropathies and Allied States.
F. DUDLEY HART, Esq., F.R.C.P.

4 P.M. .. .. Tea

4.30–5.30 P.M. .. Rheumatoid Arthritis.
OSWALD SAVAGE, Esq., O.B.E., M.R.C.P.

Sunday, 30th April

10–11 A.M. .. Physical Methods in the Rheumatic Diseases.
F. S. COOKSEY, Esq., O.B.E., M.D.

11.15 A.M.–12.15 P.M. .. Orthopædic Aspects of the Rheumatic Diseases.
J. C. R. HINDENACH, Esq., F.R.C.S.

The fee for the course will be 2 guineas, limited to 100 entries to be received, with remittance, at least 1 week before, by the General Secretary, Empire Rheumatism Council, Tavistock House (N), Tavistock-square, London, W.C.1.

SOCIETY OF APOTHECARIES OF LONDON

DIPLOMA IN INDUSTRIAL HEALTH

The next Examination will begin on MONDAY, 3RD JULY, 1950. The following Examination will be held in December, 1950.

For Regulations apply Registrar, Apothecaries' Hall, Black Friars-lane, London, E.C.4.

INSTITUTE OF ORTHOPÆDICS
at the
ROYAL NATIONAL ORTHOPÆDIC HOSPITAL

SHORT COURSE IN ADVANCED CLINICAL ORTHOPÆDICS
24TH–29TH APRIL, 1950

Monday, 24th April, Great Portland-street

10.00 A.M. .. Peripheral Vascular Disease .. Dr. J. R. Nassim
11.00 A.M. .. Peripheral Vascular Disease .. Mr. Harman Smith (Amputations)
11.45 A.M. .. Shoulder lesions .. .. Mr. V. H. Ellis
12.45 P.M. .. Lunch
1.30 P.M. .. Hallux Valgus .. .. Mr. G. L. W. Bonney
2.45 P.M. .. Radiology of Secondary Deposits in Bone .. Dr. F. C. Golding
4.00 P.M. .. Tea
4.30 P.M. .. Spondylolisthesis .. .. Mr. I. Macnab

Tuesday, 25th April, Country Branch, Stanmore

10.00 A.M. .. Suspension Apparatus .. Mr. E. J. Nangle
11.15 A.M. .. Plastics in Orthopædics .. Mr. J. T. Scales
12.45 P.M. .. Lunch
1.30 P.M. .. Infantile Paralysis (Reconstruction of Lower Limb) .. Mr. K. I. Nissen
3.00 P.M. .. Infantile Paralysis (Reconstruction of Upper Limb) .. Mr. D. M. Brooks
4.30 P.M. .. Tea

Wednesday, 26th April, Great Portland-street

10.00 A.M. .. Biochemistry in General Bone Diseases .. Dr. T. F. Dixon
11.30 A.M. .. Repair of Bone Tissue .. Dr. H. A. Sissons
12.45 P.M. .. Lunch

Thursday, 27th April, Country Branch, Stanmore

10.00 A.M. .. Tuberculosis of the Hip .. Mr. J. A. Cholmeley
11.30 A.M. .. Bacteriology in Orthopædics .. Dr. C. H. Lack
12.45 P.M. .. Lunch
1.30 P.M. .. Clinical Cases .. .. .. Mr. P. H. Newman and Mr. L. Kessel
4.00 P.M. .. Tea

Friday, 28th April, Country Branch, Stanmore

10.00 A.M. .. Pott's Paraplegia .. .. Mr. H. J. Seddon
12.45 P.M. .. Lunch
2.00 P.M. .. Scoliosis .. .. .. Mr. J. I. P. James
4.00 P.M. .. Tea

Saturday, 29th April, Great Portland-street

10.00 A.M. .. Surgery of Nerves and Tendon Injuries at Wrist .. Mr. D. M. Brooks

The fee for the course (including lunch and tea) is 7 guineas.

Early application should be made to the Dean at 234, Great Portland-street, London, W.1.

TUBERCULOSIS EDUCATIONAL INSTITUTE

3-day CLINICAL COURSES FOR DOCTORS will be held at Cheshire Joint Sanatorium, Market Drayton, and King George V Sanatorium, Godalming, on the following dates:—

Market Drayton: 12th, 13th, 14th April
10th, 11th, 12th May

Godalming: 16th, 17th, 18th May.

The fee for each course is £3 3s.

Applications for further information and enrolment should be addressed to the Secretary, Tuberculosis Educational Institute, Tavistock House North, Tavistock-square, London, W.C.1.

THE ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE

THE CERTIFICATE AND THE DIPLOMA IN PUBLIC HEALTH AND THE DIPLOMA IN INDUSTRIAL HEALTH

The next course of Instruction for the Certificate in Public Health (C.P.H.) commences on FRIDAY, 24TH MARCH, 1950, for the Preliminary Examination of the Conjoint Board of the Royal Colleges of Physicians and Surgeons. The courses, both for the Certificate and for the Diploma in Public Health, can be taken either whole-time or part-time.

A Course of Instruction, part-time or whole-time, is also provided for the Diploma in Industrial Health (Conjoint Board, and for the Society of Apothecaries). Part I is the same as, and commences concurrently with, the C.P.H. Course. Those already holding a Certificate in Public Health are exempt from that part. Prospectuses, enrolment forms, and full details of both, may be obtained from the Secretary, 28, Portland-place, W.1 (Telephone: LANgham 2731–2).

CHELSEA POLYTECHNIC, S.W.3. The Governors invite applications for post of HEAD OF THE DEPARTMENT OF PHYSIOLOGY. Candidates should possess suitable qualifications in physiology and have had experience in both teaching and research. Salary in accordance with Burnham Technical Teachers' scale for Heads of Departments, grade II (Men £800–£25–£950; Women £640–£20–£760), plus London allowance, graduate and training additions which may amount as a maximum to £153 (Men) and £132 (Women). Qualifications which will secure recognition as a Teacher by the University of London are essential.

Form of application and full particulars may be obtained by sending a stamped addressed foolscap envelope to the Clerk to the Governors, to whom applications should be submitted as soon as possible.

EASTMAN DENTAL CLINIC AND THE INSTITUTE OF DENTAL SURGERY, Gray's Inn-road, London, W.C.1. The Board of Governors and the Committee of Management invite applications for post of DIRECTOR OF THE CLINIC AND DIRECTOR OF STUDIES OF THE INSTITUTE. Post is of Consultant status and is superannuable under the F.S.S.U.

Applications, which should give full details of age, qualifications, experience, and posts held, with names of 2 referees, should be sent to the Secretary to the Board by 29th April, 1950.

THE AUSTRALIAN NATIONAL UNIVERSITY, Canberra, A.C.T. The Interim Council invites applications for the position of READER IN BIOCHEMISTRY in the John Curtin School of Medical Research. The Reader will work in the Department of Biochemistry, which is at present housed with the Commonwealth Serum Laboratories in Melbourne. The salary offered is £A1250–£A1500 (plus cost-of-living adjustment, at present £60), and an appointment will be made at an initial salary within that scale, with provision for annual increments of £50. Provision is made for 1 year's study leave on full pay in every 6 years of office, and a contribution will be made by the University to the travelling expenses of a Reader who goes overseas on study leave. Provision will also be made for travel in Australia. The University will contribute to an endowment insurance scheme on the principles of the F.S.S.U. in the United Kingdom.

2 copies of applications should be addressed to the Administrative Officer in the United Kingdom, 6, Gordon-square, W.C.1, from whom the conditions of appointment may be obtained. Applications close on 30th April, 1950.

R. A. HOHNEN, Registrar.

THE BRITISH EMPIRE CANCER CAMPAIGN invites applications for FELLOWSHIPS IN CANCER RESEARCH. Senior Fellowships will normally be tenable for 7 years at a salary of £2000–£100–£2600 p.a. Junior Fellowships will be tenable for 3 years at a salary of £1000–£100–£1200 p.a. Fellowships are open to any person of British nationality who, at the date of election, has taken a degree in any Faculty in any University in the British Empire approved by the Campaign, or who, if a female, has passed an examination which would have entitled her, if a male, to take any such degree. The possession by a Fellow at the date of election of a medical diploma registrable in the United Kingdom will be accepted as a qualification for a Fellowship in lieu of a degree. There are no restrictions as to age, although the election of a Junior Fellow above the age of 35 is unlikely. The first elections will take place in June, 1950, and work, if possible, will begin on 1st October. Fellows must carry on their research initially in Great Britain or in Northern Ireland, and only at the place at which they are authorised by the Campaign to work. The fares of successful candidates from overseas will be paid by the Campaign.

The closing date for the receipt of applications is 1st May, 1950. For further particulars and application forms apply to the General Secretary, 11, Grosvenor-crescent, Hyde Park Corner, London, S.W.1.

UNIVERSITY COLLEGE LONDON invites applications for post of LECTURER IN PHARMACOLOGY. Duties to commence 1st October, 1950. Salary £600–£1100, according to qualifications, with admission to superannuation and family allowance systems.

Applications, to be received by 20th April, should be sent to the Secretary, University College London, Gower-street, W.C.1, from whom further particulars may be obtained.

UNIVERSITY OF LONDON. Institute of Psychiatry (with which is associated the Bethlem Royal Hospital and the Maudsley Hospital). Applications invited from medical practitioners with experience in neuropathology for a Whole-time SENIOR LECTURESHIP IN NEUROPATHOLOGY, to start 1st August, 1950. The work will be mainly research, under the direction of the Professor of Neuropathology, into the pathology of mental disease, but there will also be some post-mortem and diagnostic work, especially on the material of a Neurosurgical Unit to be set up in the associated teaching hospitals. Salary scale £1250–£100–£1750, initial salary according to qualifications and experience: F.S.S.U. superannuation and family allowance.

Application forms, to be returned within 3 weeks of date of appearance of this advertisement, should be obtained from the Secretary, Institute of Psychiatry, Maudsley Hospital, Denmark-hill, S.E.5.

UNIVERSITY OF GLASGOW. Applications invited for Lecture-SHIPS in the following subjects, tenable from 1st October, 1950 :—

Biochemistry.
Physiology (1 in human physiology, medical qualification essential).

Applications also invited for ASSISTANTSHIPS in the following subject, tenable from 1st October, 1950 :—

Physiology.

Appointments will be made according to the University grading scheme. The initial salary will be fixed according to qualifications and experience.

Applications (5 copies) should be lodged, by 30th April, 1950, with undersigned, from whom further particulars may be obtained.

ROBT. T. HUTCHESON, Secretary of University Court.

THE UNIVERSITY OF SHEFFIELD. Applications invited for Full-time CHAIR OF OBSTETRICS AND GYNÆCOLOGY. It is desired that successful candidate begin his duties on 1st October, 1950. Salary at maximum level for a full-time Clinical Professor, with Superannuation provision under the F.S.S.U. and family allowance.

Applications (30 copies, 5 only from overseas candidates), with names and addresses of referees, and, if desired, copies of testimonials, should be sent to undersigned (from whom further particulars may be obtained) by 29th April, 1950.

A. W. CHAPMAN, Registrar.

POSTGRADUATE MEDICAL SCHOOL OF LONDON. Uni-VERSITY OF LONDON. 3 HOUSE SURGEONS (2 general, 1 obstetrics) required 1st June. National Health Service terms.

Apply the Dean, Postgraduate Medical School, Ducane-road, London, W.12, before 1st April, 1950.

Hospital Services : Senior Appointments

HAMMERSMITH, WEST LONDON AND ST. MARK'S HOS-PITALS. The Board of Governors invite applications for following posts :—

(*a*) Part-time CONSULTANT ANÆSTHETIST at West London Hospital, Hammersmith, W.6.

(*b*) Part-time CONSULTANT ANÆSTHETIST at St. Mark's Hospital, City-road, E.C.1.

It is estimated that the time required for the duties at West London Hospital averages 14 hours per week, and at St. Mark's Hospital 7 hours per week, but these assessments are subject to revision in the light of experience. Candidates must possess the D.A. and have had wide experience in the specialty. Candidates for more than 1 appointment should indicate their preference. The new terms and conditions of service for hospital medical and dental staffs will apply to these posts.

Applications, stating age, qualifications, training, and experience, and present appointments, with names and addresses of 3 referees, should be sent to the Secretary, Board of Governors, 150, Ducane-road, W.12. Closing date for receipt of applications is 8th April, 1950. Canvassing will disqualify.

HOSPITALS FOR DISEASES OF THE CHEST. Applications invited for post of ANÆSTHETIST (Consultant) at Brompton Hospital in accordance with the terms and conditions of service of hospital medical and dental staffs. Duties are estimated to occupy 2 or 3 notional half-days per week. Candidates must hold recognised D.A.

Applications, stating age, qualifications, and experience, with names of 3 referees, must reach undersigned by 8th April, 1950. Canvassing, directly or indirectly will disqualify.

Brompton Hospital, S.W.3. F. G. ROUVRAY, Secretary.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There is a vacancy in the Department of Psychological Medicine for a SECOND PHYSICIAN, who will be required to attend not less than 3 sessions per week. Applicants must be Fellows or Members of the Royal College of Physicians and hold the D.P.M.

Further particulars and form of application, which must be returned by 17th April, 1950, are obtainable from undersigned. Canvassing of members of the Board of Governors or Advisory Appointments Committee will lead to disqualification.

H. F. RUTHERFORD, House Governor and Secretary.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There is a vacancy for a PHYSICIAN. Appointment, in the first instance, carries with it the duties and title of Deputy Director of the Institute of Child Health. Applicants must be Fellows or Members of the Royal College of Physicians.

Further particulars and form of application, which must be returned by 17th April, 1950, are obtainable from undersigned. Canvassing of members of the Board of Governors or Advisory Appointments Committee will lead to disqualification.

H. F. RUTHERFORD, House Governor and Secretary.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications for appointment of RADIOLOGIST to be in charge of the Department of Diagnostic Radiology at the Royal Northern Hospital, Holloway, N.7, and be responsible for radiological work of other hospitals of the group. This Hospital of 305 Beds has a large specialist staff and all the usual Special Departments, including a very busy Outpatient Department, a large and well-equipped Department of Diagnostic Radiology and a school of radiography. Applicants should possess a higher medical qualification and have had good experience in this specialty. Successful candidate will be offered the choice of appointment either for whole-time work or for the maximum number of half-days a week for which payment can be made. The terms and conditions of service for hospital medical and dental staffs (Consultants) will apply to the post.

Applications, stating age, qualifications, and experience, with names of 3 referees, should reach the Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 31st March, 1950. Canvassing will disqualify, but candidates are invited to visit the Hospital by direct appointment with the Secretary.

ROYAL NATIONAL THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C.1, and Golden-square, W.1. There are vacancies for 2 OUTPATIENT OFFICERS, who rank as Senior to the Outpatient Assistant. Attendance is required on 2, 3, or 4 morning or afternoon clinics weekly as may be arranged, and the appointments are for initial periods of 6 months subject to reappointment. Salary in accordance with the terms and conditions of service at rate for Senior Hospital Medical Officers, according to the number of notional half-days.

Applicants must have had good clinical experience in the specialty and should send applications with full details to undersigned (from whom further information may be obtained if desired) on or before 7th April, 1950.

JOHN H. YOUNG, House Governor and Secretary.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications for an appointment as Part-time CONSULTANT ANÆSTHETIST to the Seamen's group of hospitals. Successful candidate will be required to undertake 5 sessions weekly, comprising 1 full day at the Dreadnought Seamen's Hospital, Greenwich, on Tuesdays; 1 full day at the Albert Dock Hospital, Alnwick-road, E.16, on Fridays; and 1 session for emergencies. Candidates must have had wide experience in anæsthetics and hold the D.A. Appointment in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales).

Apply, stating nationality, age, sex, qualifications, and experience, including details of present appointment and of war service, with names and addresses of 3 referees, to the Secretary, Advisory Appointments Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1. The last day for acceptance of applications will be 7th April, 1950, and selected candidates will be interviewed in London on 10th May, 1950. Canvassing of members of the Board or the Advisory Appointments Committee will disqualify, but applicants may visit the hospitals concerned.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications to fill a vacancy for a CONSULTANT ORTHOPÆDIC SURGEON at the Lewisham and the Sidcup and Swanley groups of hospitals. Candidates must have had wide experience in orthopædic surgery and be Fellows of a Royal College of Surgeons. Choice of whole-time employment or the maximum number of part-time sessions will be offered. Appointment in accordance with the terms and conditions of hospital medical and dental staffs (England and Wales).

Apply, stating nationality, age, sex, qualifications, and experience, including details of present appointment and of war service, with names and addresses of 3 referees, to the Secretary, Advisory Appointments Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1. The last day for acceptance of applications will be 7th April, 1950, and selected candidates will be interviewed in London on 10th May, 1950. Canvassing of members of the Board or the Advisory Appointments Committee will disqualify, but applicants may visit the hospitals concerned.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications to fill a vacancy for a Part-time CONSULTANT ORTHOPÆDIC SURGEON at the Seamen's group of hospitals. Successful candidate will be required to undertake 5 sessions weekly, comprising 1 full day on Mondays, 1 full day on Thursdays, and 1 session for emergencies. Candidates must have had wide experience in orthopædic surgery and be Fellows of a Royal College of Surgeons. Appointment in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales).

Apply, stating nationality, age, sex, qualifications, and experience, including details of present appointment and of war service, with names and addresses of 3 referees, to the Secretary, Advisory Appointments Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1. The last day for acceptance of applications will be 7th April, 1950, and selected candidates will be interviewed in London on 10th May, 1950. Canvassing of members of the Board or the Advisory Appointments Committee will disqualify, but applicants may visit the hospitals concerned.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.1. DENTAL DEPARTMENT. Applications invited for post of CONSULTANT ANÆSTHETIST to the Dental Department. The vacant sessions are Friday and Saturday mornings from 9–11.30 A.M. Applicants should state whether they wish to apply for both sessions or only one and, if the latter, which morning they would prefer. Salary in accordance with the terms and conditions of service for hospital medical and dental officers.

Applications (10 copies), with names of 3 referees, should be submitted to the Administrator and Secretary by 21st April, 1950. Canvassing of members of the Board of Governors or of the Advisory Appointments Committee will lead to disqualification.

Provincial

BATH CLINICAL AREA. South-Western Regional Hospital BOARD invite applications from registered medical practitioners for appointment of PHYSICIAN in the Bath Clinical Area which comprises Bath, North East Somerset, Mid and West Wilts. Appointment may be held either on a whole-time or maximal (9 sessions) part-time basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should possess high medical qualifications and have had wide experience in general medicine. Successful applicant will have charge of beds in the Royal United Hospital and St. Martin's Hospital, Bath, and will be required to visit other hospitals in the Clinical Area as may be required by the Regional Hospital Board from time to time.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

BATH CLINICAL AREA. South-Western Regional Hospital BOARD invite applications from registered medical practitioners for appointment of OBSTETRICIAN AND GYNÆCOLOGIST in the Bath Clinical Area which comprises Bath, North East Somerset, Mid and West Wilts. Appointment may be held either on a whole-time or maximal (9 sessions) part-time basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should possess high professional qualifications and have had wide experience in obstetrics and gynæcology. Successful applicant will have charge of beds in the Royal United Hospital, Bath, and will be required to visit other hospitals in the Clinical Area, especially those in the Trowbridge, Melksham, Malmesbury district, as may be required by the Regional Hospital Board from time to time.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

BIRMINGHAM. THE UNITED BIRMINGHAM HOSPITALS. THE GENERAL HOSPITAL. The Board of Governors invites applications for appointment of Full-time CONSULTANT SURGEON in the Department of Neurosurgery. Candidates must be Fellows of the Royal College of Surgeons (England). Appointment will be made under S.I.1948. No. 1416 and will be on the National Health Service terms and conditions of service.

Applications, stating age, qualifications with dates, experience, and nationality, with names of 3 referees, should be sent to undersigned, from whom all further information can be obtained. Closing date 22nd April, 1950. Canvassing of members of the Board or of the Advisory Appointments Committee will lead to disqualification.

G. HURFORD, Secretary, United Birmingham Hospitals.
Queen Elizabeth Hospital, Birmingham, 15, March, 1950.

BRISTOL. UNITED BRISTOL HOSPITALS. Applications invited from registered medical practitioners for 2 appointments as CONSULTANT ORTHOPÆDIC SURGEON. Duties of each appointment are estimated to occupy between 14 and 15 hours per week, and for purposes of salary are assessed as 5 notional half-days. The terms and conditions of service recently negotiated between the Ministry and the profession will apply to the appointments. Candidates should hold a higher qualification in surgery.

Applications, stating full christian names, age, and particulars of education, qualifications, and experience, with 2 recent testimonials and names of 2 referees, should be sent to undersigned, from whom further particulars can be obtained, by 17th April, 1950. STEPHEN C. MERIVALE, Secretary to the Board.
Bristol Royal Infirmary, Bristol, 2.

BRISTOL CLINICAL AREA. Barrow and Fishponds Mental HOSPITALS. SOUTH-WESTERN REGIONAL HOSPITAL BOARD invite applications from registered medical practitioners for appointment of 2 PHYSICIANS IN PSYCHIATRY at above Hospitals. Appointments on a whole-time basis and the salary and terms and conditions of service will be those laid down by the Ministry for Senior Hospital Medical Officers (£1300–£1750 p.a.). Appointments are concerned chiefly with the Barrow Hospital Branch. The Hospitals serve the entire Bristol Clinical Area and receive cases from elsewhere in the Region. There is an admission rate of over 1100 p.a. Barrow Hospital is a modern unit of 350 Beds for the treatment of neuroses and early cases of psychosis, for investigating special problems and for general clinical research. There are active Departments of Electroencephalography, Applied Psychology, with physiological and biochemical research laboratories at both hospitals working as one special research department. The patient population at Fishponds, which consists chiefly of organic and psychotic cases, is 1200. Appointments offer excellent opportunities for clinical work and research in all branches of adult psychiatry and for clinical teaching. Successful applicants will be required to work under the general direction of the Medical Superintendent. Applicants should have either high qualifications in general medicine and experience in psychiatry or neurology, or considerable experience in psychiatry and be in possession of the D.P.M. Houses in the grounds of Barrow Hospital may be available for one or possibly both of successful candidates if married, or residential accommodation if unmarried.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

BRISTOL CLINICAL AREA. South-Western Regional Hospital BOARD invite applications from registered medical practitioners for appointment of RADIOLOGIST in the Bristol Clinical Area which comprises Bristol and the adjoining districts of Gloucestershire and Somerset. Appointment may be held either on a whole-time or maximal (9 sessions) part-time basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should have had wide experience in radiology and possession of the Diploma in Medical Radiology is essential. Successful applicant will be required to work in the Radiological Department at Southmead Hospital, Bristol, and to visit other hospitals in the Clinical Area as may be required by the Regional Hospital Board from time to time.

Applications (20 copies), stating age, qualifications, and experience, with 20 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

EXETER CLINICAL AREA. Royal Western Counties Institution HOSPITAL GROUP. SOUTH-WESTERN REGIONAL HOSPITAL BOARD invite applications from registered medical practitioners for appointment of DEPUTY MEDICAL SUPERINTENDENT at the Royal Western Counties Institution, Starcross, Devon. The Hospital Group, which is responsible for the treatment and training of over 2000 mentally defective patients, covers Devon and Cornwall. Excellent opportunities exist for gaining experience in community treatment, nearly 400 patients being on licence. There are hostel branches and a holiday home, and arrangements are possible for participation in psychiatric and child-guidance clinics. Appointment will be on a whole-time basis and the terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should have had previous experience in mental deficiency and the possession of high medical qualifications is essential. Successful applicant will work under the general direction of the Medical Superintendent of the Royal Western Counties Institution. Accommodation is available, but, if preferred, the successful applicant may live out at a convenient point in the area.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

EXETER CLINICAL AREA. South-Western Regional Hospital BOARD invite applications from registered medical practitioners for appointment of ANÆSTHETIST in the Exeter Clinical Area which comprises Exeter, Torquay, North and East Devon. Appointment will be on a part-time (6 sessions) basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should have had wide experience in anæsthetics and the possession of high medical qualifications is essential. Successful applicant will be required to work mainly at the Royal Devon and Exeter Hospital, Exeter, and to visit other hospitals in the Clinical Area as may be required by the Regional Hospital Board from time to time.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

HAMPTON, MIDDLESEX. ST. MARY'S COTTAGE HOSPITAL. NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications for appointment of Part-time E.N.T. SURGEON for 1 half-day per week at above Hospital. Applicants should possess a higher surgical qualification and have had considerable experience in this specialty. The terms and conditions of service for hospital medical and dental staffs (Consultants) will apply to the post.

Applications, stating age, qualifications, and experience, with names of 3 referees, should reach the Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 31st March, 1950. Canvassing will disqualify, but candidates are invited to visit the Hospital by direct appointment with the Secretary.

HITCHIN. NORTH HERTS AND SOUTH BEDS HOSPITAL, LISTER HOSPITAL, and CHALKDELL HOSPITAL. NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications for appointment of Part-time DERMATOLOGIST for 2 half-days per week at above hospitals. Principal duties will be at the Lister Hospital. Applicants should possess a higher medical qualification and have had considerable experience in this specialty. The terms and conditions of service for hospital medical and dental staffs (Consultants) will apply to the post.

Applications, stating age, qualifications, and experience, with names of 3 referees, should reach the Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 1st April, 1950. Canvassing will disqualify, but candidates are invited to visit the hospitals by direct appointment with the Secretary.

NEWCASTLE UPON TYNE REGIONAL HOSPITAL BOARD. SOUTH EAST NORTHUMBERLAND HOSPITAL MANAGEMENT COMMITTEE GROUP. Main hospitals: Tynemouth Infirmary, 120 Beds; Preston Hospital, 470 Beds; &c. PHYSICIAN (Consultant), whole-time or part-time for a minimum of 9 sessions per week. Salary scale £1700–£2750 whole-time; pro rata part-time; starting-point according to experience, &c. Appointment subject to national terms and conditions of service and to National Health Service superannuation regulations.

Applications, with names and addresses of 1–3 referees and/or 1–3 testimonials, to the Senior Administrative Medical Officer, "Blythswood South," Osborne-road, Newcastle upon Tyne, within 14 days. Canvassing will disqualify.

NEWCASTLE UPON TYNE REGIONAL HOSPITAL BOARD. DURHAM HOSPITAL MANAGEMENT COMMITTEE GROUP. E.N.T. SURGEON (Assistant), Consultant, whole-time or part-time for a minimum of 9 sessions per week. Salary scale £1700–£2750 whole-time; pro rata part-time; starting-point according to experience, &c. The Surgeon appointed will as an interim measure act as a member of the E.N.T. surgical team for the Durham and North West Durham groups of hospitals. Appointment subject to national terms and conditions of service and to National Health Service superannuation regulations.

Applications, with names and addresses of 1–3 referees, and/or 1–3 testimonials, to the Senior Administrative Medical Officer, "Blythswood South," Osborne-road, Newcastle upon Tyne, within 14 days. Canvassing will disqualify.

NEWCASTLE UPON TYNE REGIONAL HOSPITAL BOARD. SUNDERLAND HOSPITAL MANAGEMENT COMMITTEE GROUP. PATHOLOGIST (Assistant), Consultant, whole-time. Salary scale £1700–£2750; starting-point according to experience. Appointee should, if possible, have had special experience in bacteriology, and he will be responsible to the Director of Pathology for the Sunderland Group Laboratories. Appointment subject to national terms and conditions of service, and to National Health Service superannuation regulations.

Applications, with names and addresses of 1–3 referees and/or 1–3 testimonials, to the Senior Administrative Medical Officer, "Blythswood South," Osborne-road, Newcastle upon Tyne, within 14 days. Canvassing will disqualify.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications for appointment of SURGEON to the Traumatic and Orthopædic Department at the Ashford Hospital, Ashford, Middlesex, which has some 500 Beds—mostly acute—with the usual Special Departments, and which is staffed on the team system. Appointee would be in charge of a team and would be responsible for some 60 Beds for traumatic and orthopædic surgery and the associated outpatient work. He would also be required to supervise the traumatic and orthopædic work of Hounslow Hospital (81 total Beds). Successful candidate will be offered the choice of appointment either for whole-time work or for the maximum number of half-days a week for which payment is made. The terms and conditions of service for hospital medical and dental staffs (Consultants) will apply to the post.

Applications, stating age, qualifications, and experience, with names of 3 referees, should reach the Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 31st March, 1950. Canvassing will disqualify, but candidates are invited to visit the Hospital by direct appointment with the Medical Director.

NORTHERN IRELAND HOSPITALS AUTHORITY invite applications for a post, of Consultant status, as PHYSICIAN for hospitals in Enniskillen, County Fermanagh. Appointee may also be required to undertake duties in the adjacent areas. Terms and conditions of appointment will be in accordance with the Authority's application of the Spens report to Northern Ireland. Post may be whole-time, or part-time on the basis of 9 half-days weekly, as desired by the person appointed. Applicants must be members of a Royal College of Physicians with wide experience in their specialty. Contributions will be payable under the Health Services superannuation scheme. It is the Authority's policy to give preference to persons who have served in war-time in H.M. Forces.

Applications should be made on form which may be obtained from the Secretary, Northern Ireland Hospitals Authority, Friends' Provident Building, 58, Howard-street, Belfast, which must be returned to him so as to be received by 29th April, 1950. Canvassing will disqualify. Any approach to a member of the Authority by or at the request of a candidate for the purpose of obtaining support for his application will be treated as canvassing.

MIDDLESBROUGH. ST. LUKE'S HOSPITAL. Newcastle upon TYNE REGIONAL HOSPITAL BOARD. CONSULTANT PSYCHIATRIST (whole-time) for above Hospital. Salary scale £1700–£2750 p.a. A suitable house is available. Successful candidate will be expected to act as Deputy Physician Superintendent. Candidates must have had a wide experience in psychiatry and be competent to take clinical charge, subject to the general administrative control of the Physician-Superintendent of the Hospital and participate in the work of the associated outpatient clinics and domiciliary consultant service in the area served by the Hospital. Experience and training in modern analytical psycho-therapeutic procedures an advantage. Further particulars may be obtained by communicating with the Physician-Superintendent at the Hospital. Appointment subject to national terms and conditions of service and to National Health Service superannuation regulations.

Applications, with copies of 1–3 testimonials and/or names of 3 referees, to be sent to the Regional Psychiatrist, Newcastle upon Tyne Regional Hospital Board, "Blythswood South," Osborne-road, Newcastle upon Tyne 2, within 14 days. Canvassing will disqualify.

ST. ALBANS. NAPSBURY HOSPITAL, near St. Albans. North WEST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications from suitably qualified practitioners with experience in the psychotherapy of psychotics for the part-time appointment of PSYCHOTHERAPIST to above Hospital. Duties involve attendance at the Hospital or at the outpatient clinics associated with the Hospital for a maximum of 5 half-days per week. Applications will be considered from candidates who are prepared to give not less than 2 half-days per week to the work. The terms and conditions of service for hospital medical and dental staffs (Consultants) will apply to the post.

Applications, stating age, qualifications, and experience, with names of 3 referees, should reach the Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 31st March, 1950. Canvassing will disqualify, but candidates are invited to visit the Hospital by direct appointment with the Medical Superintendent.

PLYMOUTH CLINICAL AREA. South-Western Regional Hospital BOARD invite applications from registered medical practitioners for appointment of PSYCHIATRIST in the Plymouth Clinical Area which comprises Plymouth, Kingsbridge, Tavistock, Launceston, Bude, and Liskeard. Appointment will be on a whole-time basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should have had wide experience in psychiatry and the possession of high medical qualifications and the D.P.M. is essential. Successful applicant will undertake outpatient sessions in the South Devon and East Cornwall Hospital, Plymouth, and will have charge of beds at Moorhaven Hospital, Ivybridge; he will also be required to visit other hospitals in the Clinical Area as may be required by the Regional Hospital Board from time to time.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

PLYMOUTH CLINICAL AREA. South-Western Regional Hospital BOARD invite applications from registered dental practitioners for appointment of DENTAL SURGEON in the Plymouth Clinical Area which comprises Plymouth, Kingsbridge, Tavistock, Launceston, Bude, and Liskeard. Appointment will be on a whole-time basis (2 Consultant and 9 General-practitioner dental sessions) and the salary and terms and conditions of service will be those laid down by the Ministry. Applicants should have had wide experience in dental surgery and the possession of a dental qualification is essential. Successful applicant may be required to visit all the hospitals in the Plymouth Clinical Area. The main hospital will be the South Devon and East Cornwall Hospital, Plymouth.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

PLYMOUTH CLINICAL AREA. South-Western Regional Hospital BOARD invite applications from registered medical practitioners for appointment of ASSISTANT CHEST PHYSICIAN in the Plymouth Clinical Area which comprises Plymouth, Kingsbridge, Tavistock, Launceston, Bude, and Liskeard. Appointment will be on a whole-time basis and the salary and terms and conditions of service will be those laid down by the Ministry for Senior Hospital Medical Officers (£1300–£1750 p.a.). Applicants should possess high medical qualifications and have had wide experience in diseases of the chest. Successful applicant will be required to undertake clinics in the Plymouth Area and to work in Swilly Isolation Hospital and Mount Gold Hospital, Plymouth.

Applications (20 copies), stating age, qualifications, and experience, with 20 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD invite applications from suitably qualified medical practitioners for appointment of Whole-time or Part-time PSYCHIATRIST (Consultant grading) for the Western Region, with primary attachment to the Victoria Infirmary, Glasgow. In the event of the appointment being part-time, the number of sessions will be 9. Appointment subject to the National Health Service (Scotland) superannuation regulations.

Applications (16 copies), stating age, qualifications, and experience, and present appointment, giving names of 3 referees, should be submitted by 24th April, 1950, to the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, C.2.

SCOTLAND. SOUTH-EASTERN REGIONAL HOSPITAL BOARD. EDINBURGH SOUTHERN HOSPITALS BOARD OF MANAGEMENT. Applications invited for post of MEDICAL SUPERINTENDENT of the Edinburgh Southern Group of Hospitals. Appointee will be responsible to the Board of Management for the medical administration of the hospitals and for advising on the development of the hospital and specialist services. The group comprises 5 hospitals and 2 convalescent homes all situated in Edinburgh. In all there are 128 Beds for general cases, 52 for children, 71 for maternity, 192 for chronic sick and 46 for convalescents, the major hospitals being the Bruntsfield Hospital (75 Beds for women and children), the Church of Scotland Deaconess Hospital (92 Beds for general cases and sick children) and the Elsie Inglis Memorial Maternity Hospital (71 maternity beds). Candidates should have had previous experience in medical administration and be prepared to reside in or adjacent to Edinburgh. Salary £1200 p.a., subject to review in the light of any nationally agreed scales.

Applications, giving particulars of age, qualifications, and experience, with names of 3 referees, should be sent to the Secretary, South-Eastern Regional Hospital Board, Scotland, 11, Drumsheugh-gardens, Edinburgh, to reach him by 4th April, 1950.

CANADA. THE MOOSE JAW GENERAL HOSPITAL BOARD. Applications invited from qualified medical practitioners of the British Empire for the position of PATHOLOGIST to the Moose Jaw General Hospital and district. Applicants should possess a good knowledge of general pathology including histology and clinical pathology, also have suitable references establishing competence in these fields. Commencing salary, $8500 p.a., is a living-out rate, as accommodation is not provided.

Applications, stating age, qualifications, experience, and accompanied by recent reference, should be sent by air mail as soon as possible to J. S. WILLIAMS, Superintendent.

Moose Jaw General Hospital, Moose Jaw, Saskatchewan.

NEWCASTLE UPON TYNE REGIONAL HOSPITAL BOARD. BLOOD TRANSFUSION SERVICE. DIRECTOR OF REGIONAL TRANSFUSION SERVICE (whole-time), Consultant status. Salary £1700–£2750; starting-point according to experience, &c. Appointment subject to national terms and conditions of service and to National Health Service superannuation regulations.

Applications with names and addresses of 1–3 referees and/or 1–3 testimonials, to the Senior Administrative Medical Officer, "Blythswood South," Osborne-road, Newcastle upon Tyne, 2, within 14 days. Canvassing will disqualify.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD invite applications to fill a vacancy for a CONSULTANT ANÆSTHETIST at the Canterbury and Isle of Thanet group of hospitals. Candidates must have had wide experience in anæsthetics and hold the D.A. Choice of whole-time employment or the maximum number of part-time sessions will be offered. Appointment in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales).

Apply, stating nationality, age, sex, qualifications, and experience, including details of present appointment and of war service, with names and addresses of 3 referees, to the Secretary, Advisory Appointments Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1. The last day for acceptance of applications will be 7th April, 1950, and selected candidates will be interviewed in London on 10th May, 1950. Canvassing of members of the Board or the Advisory Appointments Committee will disqualify, but applicants may visit the hospitals concerned.

SOUTH SOMERSET CLINICAL AREA. South-Western Regional HOSPITAL BOARD invite applications from registered medical practitioners for appointment of AREA PATHOLOGIST in the South Somerset Clinical Area. Appointment may be held either on a whole-time or maximal (9 sessions) part-time basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should have had wide experience in pathology and the possession of high medical qualifications is essential. Successful applicant will be required to coördinate the pathological services in the South Somerset Area and to visit all hospitals in this Clinical Area as may be required by the Regional Hospital Board from time to time. The main laboratory is situated in the Taunton and Somerset Hospitals, Taunton.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

SOUTH SOMERSET CLINICAL AREA. South-Western Regional HOSPITAL BOARD invite applications from registered medical practitioners for appointment of RADIOLOGIST in the South Somerset Clinical Area. Appointment may be held either on a whole-time or maximal (9 sessions) part-time basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should have had wide experience in radiology and possession of the Diploma in Medical Radiology is essential. Successful applicant will be required to coördinate and develop the radiological service in the South Somerset Area and to visit all hospitals in this Clinical Area as may be required by the Regional Hospital Board from time to time. The main centre will be at the Taunton and Somerset Hospitals, Taunton.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

WELSH REGIONAL HOSPITAL BOARD invite applications from registered medical practitioners for post of DEPUTY MEDICAL SUPERINTENDENT (Senior Hospital Medical Officer grade) for the North Wales Sanatorium near Denbigh (400 Beds, pulmonary and non-pulmonary tuberculosis, for men, women, and children). The Sanatorium also contains a major thoracic surgery unit. Terms and conditions of service will be those recently announced by the Ministry of Health for Senior Hospital Medical Officers, subject to possible adjustment in respect of Local Authority work. Wide experience of tuberculosis is essential and successful applicant may be expected to do domiciliary work in the absence of the Medical Superintendent. A five-bedroomed house is available for which the necessary deduction from salary will be made.

Applications, giving a summary of qualifications, experience, and publications, with names of 3 referees, should be addressed to the Senior Administrative Medical Officer, Welsh Regional Hospital Board, Cardiff, within 14 days of appearance of this advertisement. Canvassing will disqualify but this does not preclude candidates from visiting the Sanatorium.

WELSH REGIONAL HOSPITAL BOARD invite applications from registered medical practitioners for post of DEPUTY MEDICAL SUPERINTENDENT (Senior Hospital Medical Officer grade), Abergele Sanatorium (251 Beds, of which approximately 200 are for children suffering from pulmonary and non-pulmonary tuberculosis and the remainder for male pulmonary cases). Terms and conditions of service will be those recently announced by the Ministry of Health for Senior Hospital Medical Officers, subject to possible adjustment in respect of Local Authority work. Wide experience of tuberculosis is essential. A four-bedroomed house is available, for which the necessary deduction from salary will be made.

Applications, giving a summary of qualifications, experience, and publications, with names of 3 referees, should be addressed to the Senior Administrative Medical Officer, Welsh Regional Hospital Board, Cardiff, within 14 days of appearance of this advertisement. Canvassing will disqualify, but this does not preclude candidates from visiting the Sanatorium.

STOKE-ON-TRENT. GROUNDSLOW SANATORIUM, Tittensor, near STOKE-ON-TRENT. LOCUM TENENS required for Medical Superintendent at above Sanatorium for the period 30th July–20th August. Remuneration 31½ guineas per week, less deduction for residential emoluments at rate of £150 p.a.

Applications to be forwarded as soon as possible to—

H. H. JONES, Secretary,
Stafford Hospital Management Committee.
13, Foregate-street, Stafford.

WEST CORNWALL CLINICAL AREA. South-Western Regional HOSPITAL BOARD invite applications from registered medical practitioners for appointment of PHYSICIAN in the West Cornwall Clinical Area which comprises the districts of Truro, Bodmin, Newquay, St. Austell, Falmouth, Redruth, and Penzance. Appointment may be held either on a whole-time or maximal (9 sessions) part-time basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should possess high medical qualifications and have had wide experience in general medicine. Successful applicant will have charge of beds at the West Cornwall Hospital, Penzance, and will be required to visit other hospitals in the Clinical Area as may be required by the Regional Hospital Board from time to time.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

WEST CORNWALL CLINICAL AREA. South-Western Regional HOSPITAL BOARD invite applications from registered medical practitioners for appointment of OBSTETRICIAN AND GYNÆCOLOGIST in the West Cornwall Clinical Area which comprises the districts of Truro, Bodmin, Newquay, St. Austell, Falmouth, Redruth, and Penzance. Appointment may be held either on a whole-time or maximal (9 sessions) part-time basis and the salary and terms and conditions of service will be those negotiated for Consultants between the Ministry and the profession. Applicants should possess high surgical qualifications and have had wide experience in obstetrics and gynæcology. Successful applicant will have charge of beds at the Camborne-Redruth Miners' and General Hospital, Redruth, and will be required to visit other hospitals in the Clinical Area as may be required by the Regional Hospital Board from time to time.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and the names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

WEST CORNWALL CLINICAL AREA. South-Western Regional HOSPITAL BOARD invite applications from registered medical practitioners for appointment of ORTHOPÆDIC SURGEON in the West Cornwall Clinical Area which comprises the districts of Truro, Bodmin, Newquay, St. Austell, Falmouth, Redruth, and Penzance. Appointment may be held either on a whole-time or maximal (9 sessions) part-time basis and the salary and terms and conditions of service will be those negotiated for consultants between the Ministry and the profession. Applicants should possess high surgical qualifications and have had wide experience in orthopædic and traumatic surgery. Successful applicant will have charge of beds at the Royal Cornwall Infirmary, Truro, and will be required to visit other hospitals in the Clinical Area as may be required by the Regional Hospital Board from time to time.

Applications (15 copies), stating age, qualifications, and experience, with 15 copies of 2 testimonials, and names and addresses of 2 referees, should be addressed to the Secretary of the South-Western Regional Hospital Board, 5, Cotham Lawn-road, Bristol, 6, so as to reach him by 22nd April, 1950. Canvassing will disqualify.

Hospital Services : Junior Appointments

BATTERSEA GENERAL HOSPITAL, Battersea Park, S.W.11. BATTERSEA AND PUTNEY GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT SURGICAL OFFICER (B1), graded Junior Hospital Medical Officer. Salary £700–£50–£1000 p.a. Suitably qualified R practitioners now holding B2 appointments are invited to apply.

Applications, with copies of 2 recent testimonials, to the Administrative Officer.

CENTRAL MIDDLESEX HOSPITAL, Park Royal, N.W.10. RESIDENT JUNIOR REGISTRAR in Casualty Department. Successful applicant will work under supervision of Orthopædic and Traumatic Specialist. Preference given to applicant who has held resident surgical and medical posts in general hospitals. Salary terms and conditions of service as issued by Ministry of Health. Appointment for 6 months, may be renewed for further 6 months.

Applications to Secretary, Central Middlesex Group Hospital Management Committee, Acton-lane, N.W.10, by 8th April, 1950.

CHILDREN'S HOSPITAL, Sydenham, S.E.26. Required, RESIDENT MEDICAL OFFICER (B2), Male or Female, commencing 10th May, 1950. Special preference would be given to candidates holding the D.C.H. Post recognised for the D.C.H. examination. The work includes pædiatric medical care and surgery. Salary £350–£450 p.a., according to experience, less £100 p.a. for residential emoluments. Appointment is for 6 months in the first instance.

Applications, stating age, qualifications with dates, and addresses of 3 referees, should be forwarded to the Administrative Officer, Sydenham Children's Hospital, by 1st May, 1950.

FULHAM HOSPITAL, St. Dunstan's-road, Hammersmith, W.6. (A Hospital of the Fulham and Kensington group.) Required, SENIOR SURGICAL REGISTRAR (B1). Candidates should possess a higher qualification in general surgery. The Hospital is a general hospital of 400 Beds. Salary and conditions of service in accordance with national scale. Appointment for 1 year in the first instance.

Applications, stating age, and giving full particulars and names of 3 referees, should be made to the Secretary (L.20), Fulham and Kensington Hospital Management Committee, St. Mary Abbots Hospital, Marloes-road, Kensington, W.8, by 3rd April, 1950.

FULHAM HOSPITAL. St. Dunstan's-road, Hammersmith, W.6. (A hospital of the Fulham and Kensington group.) Required, HOUSE SURGEONS (A), first posts held, 3 vacancies. Two of the positions recognised for F.R.C.S. England and third position is in connection with Special Departments. Appointments limited to 6 months. Salaries and conditions of service in accordance with national scale.

Applications, stating age, and giving full particulars, with copies of 3 testimonials, should be made to the Secretary (L.19), Fulham and Kensington Hospital Management Committee, St. Mary Abbots Hospital, Marloes-road, Kensington, W.8, by 3rd April, 1950.

GERMAN HOSPITAL, Dalston, E.8. (217 Bed complement.) Required, JUNIOR REGISTRAR ANÆSTHETIST (B1) to act also as Casualty Officer. Salary £670 p.a., less £130 p.a. for full residential emoluments. Post now vacant and appointment is for 1 year in the first instance.

Applications, with copies of 3 testimonials, should state age, sex, nationality, qualifications, and experience, and be addressed to the Group Secretary, Hackney Group (No. 6) Hospital Management Committee, Hackney Hospital, E.9, as soon as possible.

GUY'S HOSPITAL, S.E.1. Required, Registrar (part-time) in the Department of Psychological Medicine, with attendance on 5 sessions per week, grading Registrar, first year. Duties will include investigation and treatment of adult inpatients and outpatients under the direction of the senior staff. Post offers many opportunities for postgraduate study.

Forms of application are obtainable from the Dean, Guy's Hospital Medical School, S.E.1, and should be forwarded to him, with copies of 3 testimonials, by 15th April, 1950.

HAMPSTEAD GENERAL HOSPITAL, The Green, N.W.3. Royal FREE GROUP. Required, RESIDENT HOUSE PHYSICIAN (B2), Male or Female, post vacant 1st June, tenable for 6 months. Salary in accordance with the new national scale.

Applications on the prescribed form, with copies of 3 recent testimonials, to be returned by 7th April.

KENNETH A. F. MILES, House Governor.

HAMPSTEAD GENERAL HOSPITAL, The Green, N.W.3. Royal FREE GROUP. Required, RESIDENT HOUSE SURGEON (B2), Male or Female, post vacant 1st June, tenable for 6 months. Salary in accordance with the new national scale.

Applications on the prescribed form, with copies of 3 recent testimonials, to be returned by 7th April.

KENNETH A. F. MILES, House Governor.

HOSPITALS FOR DISEASES OF THE CHEST. Applications invited for following whole-time appointments for 6 months, commencing 1st May, 1950, from registered medical practitioners, Male and Female :—

SURGICAL REGISTRAR (B1), resident, at Brompton Hospital, S.W.3, for which there are 2 vacancies. Applicants must have held a resident hospital appointment. Salary according to national scale.

ASSISTANT RESIDENT MEDICAL OFFICER at Brompton Hospital, S.W.3. Experience in artificial pneumothorax essential, and in E.N.T. work desirable. Salary at Junior Registrar rate.

HOUSE PHYSICIAN (B2), resident, at Brompton Hospital, S.W.3, for which there are 3 vacancies. Duties include work in the Outpatient Department as well as in the wards. Salary within the House Officer grade.

Applications, stating age, qualifications with dates, nationality, and previous appointments held, and accompanied by copies of 1 or more recent testimonials, should reach undersigned by 8th April, 1950.

Brompton Hospital, S.W.3. F. G. ROUVRAY, Secretary.

HOSPITALS FOR DISEASES OF THE CHEST. Vacancies occur 1st June, 1950, for 2 RESIDENT HOUSE PHYSICIANS (B2) at the London Chest Hospital, E.2. Appointments are for 6 months of which 2 will be at the Country Branch, and the posts are graded as House Officers. Duties include work in the Outpatient Department and Refill Clinics as well as in wards. R practitioners holding A posts may apply.

Applications, stating age, qualifications with dates, and previous appointments held, with copies of 3 testimonials, should reach undersigned by 15th April, 1950.

London Chest Hospital, E.2. THOMAS BROWN, Secretary.

HOSPITALS FOR DISEASES OF THE CHEST. A vacancy occurs 1st June, 1950, for RESIDENT SURGICAL OFFICER (B1) at the London Chest Hospital, E.2. Appointment for 6 months, of which 2 will be at the Country Branch, and the post is graded as Registrar. Previous surgical experience necessary. R practitioners holding A posts may apply.

Applications, stating age, qualifications with dates, and previous appointments held, with copies of 3 testimonials, should reach undersigned by 15th April, 1950.

London Chest Hospital, E.2. THOMAS BROWN, Secretary.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will shortly be a vacancy for a RESIDENT AURAL REGISTRAR. Appointment is graded as that of a Registrar within the terms and conditions of service of hospital medical and dental staffs (England and Wales).

Further particulars and forms of application, which must be returned by 17th April, 1950, are obtainable from H. F. RUTHERFORD, House Governor and Secretary.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will be a vacancy for a MEDICAL REGISTRAR AND PATHOLOGIST in May, 1950. Appointment will be full-time and graded as that of Senior Registrar in accordance with the terms and conditions of service of hospital medical and dental officers (England and Wales).

Further particulars and form of application, which must be returned by 3rd April, 1950, may be obtained from H. F. RUTHERFORD, House Governor and Secretary.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will shortly be a vacancy for an ASSISTANT MEDICAL REGISTRAR (whole-time). Appointment is graded as that of a Registrar within the terms and conditions of service of hospital medical and dental staffs (England and Wales).

Further particulars and form of application, which must be returned by 10th April, 1950, are obtainable from H. F. RUTHERFORD, House Governor and Secretary.

HACKNEY HOSPITAL, E.9. Required, Casualty Officer (A) or (B2), also to act as House Physician to the Skin Department. Post tenable for 6 months. Salary in accordance with the terms and conditions of service for hospital medical and dental staffs. A deduction at rate of £100 p.a. will be made for residential emoluments.

Applications, with copies of 3 testimonials, should be sent to the Secretary, Hospital Management Committee, Hackney Group (No. 6), Hackney Hospital, E.9, by 27th March, 1950.

KING EDWARD MEMORIAL HOSPITAL, Ealing. House Officer (B2), resident, Second Medical Officer to Casualty and Fracture Departments (second or third appointment), vacant now. Terms and conditions as approved for hospital medical staff.

Applications, stating age, nationality, qualifications with dates, and details of experience, with copies of 2 recent testimonials, should be sent to the Secretary, South West Middlesex Hospital Management Committee, 1, Churchfield-road, Ealing, W.13. Closing date 29th March.

KING EDWARD MEMORIAL HOSPITAL, Ealing. Required, REGISTRAR (B1), Resident Anæsthetist, post vacant now. Salary £775, rising to £890. Terms and conditions as approved for hospital medical staff. Appointment normally for 2 years. The holding of D.A. will be an advantage.

Applications, stating age, nationality, qualifications, with dates and details of experience, with copies of 2 recent testimonials to Secretary, South West Middlesex Hospital Management Committee, 1, Churchfield-road, Ealing, W.13. Closing date 29th March.

LAMBETH HOSPITAL, Brook-drive, S.E.11. Required, Resident HOUSE PHYSICIAN (B2), post vacant 1st April, 1950. Appointment for 6 months. Salary £400 or £450 p.a., according to experience, less £100 p.a. for board, residence, &c.

For form of application apply to the Medical Superintendent at the Hospital.

LEWISHAM HOSPITAL, London, S.E.13. (General—611 Beds.) LEWISHAM GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (A) or (B2) to the Orthopædic and Traumatic Department. 6 months' appointment, vacant now. Salary £350–£450 p.a., according to experience, less £100 p.a. for residential emoluments.

Applications, stating age, qualifications, and experience, with copies of 3 recent testimonials or names of referees, should be sent immediately to the Surgeon-Superintendent, Lewisham Hospital, Lewisham High-street, London, S.E.13.

LEYTONSTONE GROUP HOSPITAL MANAGEMENT COM-MITTEE. REGISTRAR (non-resident) required for the Group Geriatric Unit. Duties at Whipps Cross Hospital and Langthorne Hospital, mainly at the former. This rapidly developing Geriatric Unit affords excellent opportunities for training in modern methods of geriatrics. Salary £775 p.a. by 1 annual increment to £890 p.a.

Applications, stating age, qualifications, experience, and names of 3 referees, to the Secretary, Langthorne Hospital, London, E.11, by 3rd April.

METROPOLITAN HOSPITAL, Kingsland-road, London, E.8. (General—147 Beds.) CENTRAL GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, 2 HOUSE PHYSICIANS (A) or (B2) at above Hospital. Salary at rates for House Officers, first, second, or third post—viz., £350, £400, or £450 p.a., less £100 p.a. for residential emoluments.

Applications, with copies of 3 testimonials, should be addressed by 8th April, 1950, to FRANK CHAMBERS, House Governor.

METROPOLITAN HOSPITAL, Kingsland-road, London, E.8. (General—147 Beds.) CENTRAL GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, 3 HOUSE SURGEONS (A) or (B2) at above Hospital. Salary at rates for House Officers, first, second, or third post—viz., £350, £400, or £450 p.a., less £100 p.a. for residential emoluments.

Applications, with copies of 3 testimonials, should be addressed by 8th April, 1950, to FRANK CHAMBERS, House Governor.

MILLER GENERAL HOSPITAL, Greenwich, S.E.10. (180 Beds.) Required, CASUALTY OFFICER (B2) at above Hospital for 6 months from approximately 1st May, 1950. Salary £400 or £450 p.a., according to experience.

Applications, stating age, experience, and qualifications, with copies of 1–3 recent testimonials, should reach the Secretary, Greenwich and Deptford Hospital Management Committee, St. Alfege's Hospital, Vanbrugh-hill, Greenwich, S.E.10, by 7th April, 1950.

PARK HOSPITAL, Hither Green, London, S.E.13. Required, JUNIOR REGISTRAR (B1) to the Infectious Diseases Unit. 12 months' appointment. Salary £670 a year, less £150 a year for board, lodging, &c., if resident. Non-residence may be allowed, in which case the officer must be resident when on duty.

Applications, stating age, nationality, qualifications, and experience, with names of 2 referees, should be forwarded immediately to the Secretary, Lewisham Group Hospital Management Committee, Lewisham Hospital, London, S.E.13.

NORTHUMBERLAND HOUSE, Finsbury Park, N.4. Assistant required for Private Mental Hospital, North London. £500 p.a., plus full emoluments. Psychotherapy and all modern treatments.

Apply Physician-Superintendent.

PRINCESS BEATRICE HOSPITAL, Earl's Court, S.W.5. (101 Beds.) Required, RESIDENT SURGICAL OFFICER, post vacant 14th April, 1950. Applicants should have held house appointments and had surgical experience. Preference given to candidates holding diploma of F.R.C.S. Successful candidate will be graded as a Junior Registrar or Registrar, according to qualifications and experience. Appointment for 6 months in the first instance and subject to the terms and conditions for hospital medical staff.

Applications, stating age, nationality, qualifications, experience, and details of previous appointments with dates, accompanied by copies of 3 recent testimonials, should be sent to the House Governor by 29th March, 1950.

POPLAR HOSPITAL, East India Dock-road, London, E.14. (120 Beds.) Required, CASUALTY HOUSE SURGEON (first, second, or third post). Salary in accordance with terms of service issued by the Ministry of Health. R practitioners holding A posts may apply.

Applications, stating age, nationality, and qualifications, to be submitted to the Assistant Secretary as soon as possible.

PRINCE OF WALES'S GENERAL HOSPITAL. (240 Beds.) Required, RESIDENT CASUALTY OFFICER (B2), third post, vacant 25th March, 1950, for 6 months. Salary £450 p.a.

Applications should be sent to the Secretary, Tottenham Group Hospital Management Committee (Group 4), The Green, Tottenham, N.15, as soon as possible.

QUEEN ELIZABETH HOSPITAL FOR CHILDREN, Hackney-road, E.2, and THE MOTHERS' HOSPITAL, Lower Clapton-road, E.5. Applications invited for Men and Women for appointment of MEDICAL REGISTRAR (B1), graded Registrar or Senior Registrar, to commence 1st June, 1950. Post is full-time and non-resident at above Hospitals. Duties at the Mothers' Hospital will be exclusively with infants in the Wards and children attending the Clinics. Salary and conditions of service are as prescribed by the terms of service of hospital medical staff. Candidates must have had experience in pædiatrics, and the M.R.C.P. will be an advantage. Appointment for 12 months and renewable. Applications from R practitioners now holding B1 posts cannot be considered unless they are ineligible for H.M. Forces.

Application forms may be obtained from undersigned, and should be returned, with copies of testimonials, by 3rd April, 1950. CHARLES H. BESSELL, Secretary.

ROYAL CANCER HOSPITAL, Fulham-road, London, S.W.3. Required, Part-time SENIOR REGISTRAR to the E.N.T. Department. Candidates must be duly qualified and registered under the Medical Act. Preference given to those holding the diploma F.R.C.S. Salary in accordance with the Ministry of Health terms and conditions of service for hospital medical staff. Appointment for 1 year subject to reappointment for a maximum of 3 years.

Applications (on a form which will be supplied by the House Governor), with copies of 3 recent testimonials, should be sent to the House Governor by 3rd April, 1950.

ROYAL CANCER HOSPITAL, Fulham-road, London, S.W.3. Required, HOUSE SURGEON (B2). Post is House Officer status and tenable for 6 months as from 1st May, 1950. Salary in accordance with Ministry of Health terms and conditions of service for hospital medical staff.

Applications (on a form which will be supplied by the House Governor), with copies of 3 recent testimonials, should be sent to the House Governor by 3rd April, 1950.

ROYAL CANCER HOSPITAL, Fulham-road, London, S.W.3. Required, Part-time SENIOR REGISTRAR (medical). Candidates must be duly qualified and registered under the Medical Act. Preference given to those holding the diploma M.R.C.P. Salary in accordance with the Ministry of Health terms and conditions of service for hospital medical staff. Appointment for 1 year subject to reappointment for a maximum of 3 years.

Applications (on a form which will be supplied by the House Governor), with copies of 3 recent testimonials, should be sent to the House Governor by 3rd April, 1950.

ROYAL CANCER HOSPITAL, Fulham-road, London, S.W.3. Required, RESIDENT MEDICAL OFFICER (B1). Post is Junior Registrar status and tenable for 12 months as from 1st May, 1950. Preference given to candidates holding the diploma F.R.C.S. Salary in accordance with Ministry of Health terms and conditions of service for hospital medical staff.

Applications (on a form which will be supplied by the House Governor), with copies of 3 recent testimonials, should be sent to the House Governor by 3rd April, 1950.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, London, W.1. Required, HOUSE SURGEON (B2), resident. Duties to commence 1st May. Salary and conditions of service in accordance with those laid down by the Ministry of Health.

Applications, with copies of 3 testimonials, to be addressed to the House Governor by 14th April.

SOUTH WEST MIDDLESEX HOSPITAL MANAGEMENT COMMITTEE invite applications for post of ASSISTANT PHYSICIAN (Senior Registrar) Ealing Chest Clinic. Candidates should have a higher qualification and must be experienced in tuberculosis and diseases of the chest. The beds associated with this clinic are in West Middlesex Hospital. Salary, terms, and conditions of service as approved for hospital medical staff.

Applications (endorsed "Senior Registrar, Ealing Chest Clinic"), stating age, nationality, qualifications, and experience, with copies of up to 3 recent testimonials, to the Secretary, 1, Churchfield-road, W.13. Closing date 8th April.

ROYAL CHEST HOSPITAL, City-road, London, E.C.1. Northern GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications invited for post of NON-RESIDENT JUNIOR MEDICAL REGISTRAR (B1), part-time, at above Hospital, vacant 1st May, 1950. Preference given to applicants with experience in chest diseases and cardiology. Duties consist of attendance at afternoon outpatient sessions on 5 days a week, involving a minimum of 5 notional half-days. Appointment tenable for 1 year and salary in accordance with the terms and conditions of service issued by the Ministry of Health.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, with copies of 3 recent testimonials, should be sent by 8th April, 1950, to the Secretary, Royal Northern Hospital, Holloway, London, N.7.

ST. ALFEGE'S HOSPITAL, Vanbrugh-hill, Greenwich, S.E.10. (832 Beds—recognised by R.C.S. for Final F.R.C.S. examination requirements.) Required, SENIOR HOUSE SURGEON (B2) at above Hospital. Salary £400–£450 p.a., according to experience, less £100 p.a. for board and lodging. Appointment for 6 months from a date to be arranged.

Applications, together with copies of not more than 3 recent testimonials, should reach Secretary, Greenwich and Deptford Hospital Management Committee at above address as soon as possible.

ST. JOHN'S HOSPITAL, Morden-hill, Lewisham, London, S.E.13. LEWISHAM GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (A). 6 months' appointment vacant on 24th April. Salary £350 p.a., less £100 p.a. for residential emoluments.

Applications, with copies of recent testimonials, should be sent to the Secretary at the Hospital as soon as possible.

ST. MARY'S HOSPITAL, London, W.2. Applications invited from registered medical practitioners for post of FIRST REGISTRAR to the Obstetric and Gynæcological Department (part-time). Successful candidate will be required to undertake up to 9 notional half-days weekly. Appointment for a first period of 12 months as from the 1st May, 1950. The grading of the post will be Senior Registrar—i.e., at the equivalent whole-time salary of £1000–£1300 p.a.

Applications, stating nationality, date of birth, permanent address, qualifications with date of registration, details of previous appointments with grading, with names and addresses of 3 referees, should reach undersigned by 8th April, 1950.

4th March, 1950. W. PARKES, House Governor.

ST. MARY'S HOSPITAL, London, W.2. Required, Registrar (whole-time) to the Ophthalmic Department. Grading of this post is either Registrar £775 p.a., or Senior Registrar £1000 p.a., according to successful candidate's experience. Appointment for a first period of 12 months, as from 1st May, 1950.

Applications, stating nationality, date of birth, permanent address, qualifications with date of registration, details of previous appointments with grading, with names and addresses of 3 referees, should reach undersigned by 8th April, 1950.

W. PARKES, House Governor.

ST. MARY'S HOSPITAL, London, W.2. Applications invited for post of REGISTRAR (whole-time) to the Diagnostic Radiological Department. Candidates must hold a Diploma in Radiology. Appointment for a first period of 12 months, as from 1st May, 1950. The grading of this post is either Registrar £775 p.a., or Senior Registrar £1000 p.a., according to the candidate's experience.

Applications, stating nationality, date of birth, permanent address, qualifications with dates, and details of previous appointments, with names and addresses of 2 referees, should reach undersigned by 1st April, 1950.

4th March, 1950. W. PARKES, House Governor.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Upper-road, Plaistow, London, E.13. JUNIOR REGISTRAR (Casualty Officer) for 1 year, to commence duty as soon as possible. Salary £670 p.a., less a deduction of £100 p.a. in respect of residential emoluments and subject to National Health Service superannuation regulations.

Candidates should send applications, with copies of recent testimonials, immediately to—

M. J. HUNTLEY, Secretary,
West Ham Group Hospital Management Committee.
c/o Queen Mary's Hospital, Stratford, London, E.15.

ST. MARY ABBOTS HOSPITAL, Marloes-road, Kensington, W.8. (A Hospital of the Fulham and Kensington group.) Required, HOUSE PHYSICIAN (A), first post held. Required to commence duty early in April. Appointment limited to 6 months. Salary and conditions of service in accordance with national scale.

Applications, stating age, and giving full particulars, with copies of 3 testimonials, should be made to the Secretary (L.21), Fulham and Kensington Hospital Management Committee, St. Mary Abbots Hospital, Marloes-road, Kensington, W.8, by 3rd April, 1950.

ST. STEPHEN'S HOSPITAL, Fulham-road, Chelsea, S.W.10. ANÆSTHETIST (B2), resident This post is recognised for the D.A. National scale salary.

Applications should give names of 2 personal referees, and be sent to the Medical Superintendent as soon as possible.

ST. STEPHEN'S HOSPITAL, Fulham-road, Chelsea, S.W.10. HOUSE PHYSICIAN (A), resident, for general Medical Wards. National scale salary.

Applications should give names of 2 personal referees, and be sent to the Medical Superintendent as soon as possible.

WHIPPS CROSS HOSPITAL, London, E.11. Hospital Management COMMITTEE, LEYTONSTONE GROUP. HOUSE PHYSICIAN (A) or (B2) required at above Hospital. Salary and conditions of service in accordance with those decided by the Ministry of Health.

Applications, stating age, qualifications, and names of 3 referees, to the Medical Superintendent of the Hospital.

WHIPPS CROSS HOSPITAL, London, E.11. Junior Registrar required as Casualty Officer at above Hospital. Appointee will carry out the duties of Admissions and Casualty Officer. Salary and conditions of service in accordance with those laid down by the Ministry of Health. Tenure of office 1 year, subject to renewal by the Committee.

Applications, stating age, qualifications, and names of 3 referees, to Secretary, Hospital Management Committee, Leytonstone Group, Langthorne Hospital, London, E.11, by 4th April.

WANSTEAD HOSPITAL, Hermon-hill, Wanstead, London, E.11. (200 Beds.) Required, OBSTETRIC HOUSE SURGEON (A) or (B2), post vacant 14th April, 1950. Salary £350–£450 p.a., according to experience, with a deduction at rate of £100 p.a. for residential emoluments.

Applications, stating age, qualifications, and experience, with names of 2 referees, should be sent by 31st March, 1950 to R. HALTON HARRISON, Secretary, Hospital Management Committee, Forest Group (No. 11), Langthorne-road, Leytonstone, E.11.

WANSTEAD HOSPITAL, Wanstead, E.11. (200 Beds.) Required, HOUSE PHYSICIAN (A) or (B2), post vacant 7th April, 1950. Salary £350–£450 p.a., according to experience, with a deduction at rate of £100 p.a. for residential emoluments.

Applications, stating age, qualifications, and experience, and names of 2 referees, should be sent by 1st April, 1950, to R. HALTON HARRISON, Secretary, Hospital Management Committee, Forest Group (No. 11), Langthorne-road, Leytonstone, E.11.

WHITTINGTON HOSPITAL, N.19. Archway Group Hospital MANAGEMENT COMMITTEE. Required, REGISTRAR in the Anæsthetic Department. Candidates should have held a house appointment and preference given to those holding a D.A. Salary in accordance with national scale.

Applications, stating age, qualifications, and previous experience, should be sent, with copies of 3 recent testimonials, to reach the Medical Superintendent, Whittington Hospital, Highgate-hill, N.19, within 10 days of appearance of this advertisement.

Provincial

ASHTON-UNDER-LYNE. LAKE HOSPITAL. (600 Beds.) Required, RESIDENT HOUSE SURGEON (B2). Appointment limited to 6 months. Salary £450 p.a., less £100 p.a. for residential emoluments. R practitioners holding A posts may apply.

Applications should be addressed to—
R. W. MCVITY, Secretary, Ashton,
Hyde, and Glossop Hospital Management Committee.
Astley-road, Stalybridge, Cheshire.

ASHTON, HYDE, AND GLOSSOP HOSPITAL MANAGEMENT COMMITTEE.

Lake Hospital, Ashton-under-Lyne (600 Beds)

JUNIOR ANÆSTHETIC REGISTRAR (B1) required. Salary £670 p.a., less £100 p.a. for board and lodging, &c. Post is full-time, and preference given to those holding or studying for the D.A. Suitably qualified R practitioners holding B2 appointments, also those holding B1 posts and ineligible for H.M. Forces, are invited to apply.

Applications, stating age, experience, and qualifications, with copies of at least 2 testimonials, should be forwarded as soon as possible to R. W. MCVITY, Secretary.
Astley-road, Stalybridge, Cheshire.

ASHTON-UNDER-LYNE. DISTRICT INFIRMARY. (200 Beds.) Applications invited for post of Male RESIDENT CASUALTY OFFICER (B2) at a salary of £400–£450 p.a., according to experience. A charge of £100 p.a. will be made for residential emoluments. The Infirmary serves a thickly populated industrial area and the scope for experience is wide and varied. The Senior Resident post is recognised for the Diploma of Fellow of the Royal College of Surgeons (England). R practitioners holding A posts may apply, when appointment will be limited to 6 months.

Applications should be addressed to—
R. W. MCVITY, Secretary, Ashton,
Hyde, and Glossop Hospital Management Committee.
Astley-road, Stalybridge.

ASHTON-UNDER-LYNE. DISTRICT INFIRMARY. (200 Beds.) Applications invited for post of Male HOUSE SURGEON (A) at a salary of £350 p.a., less £100 p.a. for residential emoluments. Ashton Infirmary is a busy general hospital 6 miles from Manchester and this post offers excellent opportunity to gain experience in general surgery; there is also a large orthopædic clinic and other special departments. R practitioners within 3 months of qualification may apply, when appointment will be limited to 6 months.

Applications should be addressed to—
R. W. MCVITY, Secretary, Ashton,
Hyde, and Glossop Hospital Management Committee.
Astley-road, Stalybridge.

ASHFORD HOSPITAL, Ashford, Middlesex. Staines Group HOSPITAL MANAGEMENT COMMITTEE. Required, CASUALTY OFFICER (B1), non-resident, Junior Hospital Medical Officer, post vacant. Salary £700–£50–£1000 p.a., in accordance with National Health Service terms and conditions of service. Applications from R practitioners cannot be considered unless they are ineligible for H.M. Forces.

Applications, stating age, qualifications, and experience, with copies of up to 3 recent testimonials, to Medical Director (L) of Hospital.

ASHFORD HOSPITAL, Ashford, Middlesex. Staines Group HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE SURGEON (A), Male, for general surgical wards. 6 months' appointment, vacant on 17th April, 1950. National Health Service salary and conditions of service. R practitioners within 3 months of qualification may apply.

Applications, stating age, qualifications, and experience, with copies of up to 3 recent testimonials, to Medical Director of Hospital by 8th April, 1950.

ASHFORD HOSPITAL, Ashford, Middlesex. Staines Group HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE OFFICER (A), Male, for Medical and Surgical Wards. 6 months' appointment. National Health Service salary and conditions of service. R practitioners within 3 months of qualification may apply.

Applications, stating age, qualifications, and experience, with copies of up to 3 recent testimonials, to Medical Director of Hospital as soon as possible.

ABERDEEN GENERAL HOSPITALS BOARD OF MANAGE-MENT. ABERDEEN ROYAL INFIRMARY AND WOODEND HOSPITAL. Required, REGISTRAR (B1) in General Medicine (grade II or III) in above Hospitals. Post is whole-time and non-resident. Salary in accordance with National Health Service scale—viz., grade II, £775 p.a., grade III, £670 p.a.

Applications, giving details of qualifications and experience, with names of 3 referees, should be lodged with the Secretary, Aberdeen General Hospitals, 62, Queen's-road, Aberdeen, within 14 days of appearance of this advertisement.

ABERDEEN MENTAL HOSPITALS BOARD OF MANAGEMENT invite applications to fill a vacancy for a Whole-time REGISTRAR (B1) in Psychiatry. Applicants will be offered grade II or grade III status according to qualifications and experience. Salary and terms and conditions of service for hospital medical and dental officers under the National Health Service (Scotland) Act will apply to the post. Residential quarters for an unmarried officer are available. Appointment for 1 year with eligibility for reappointment.

Applications, with names of 2 referees, should be made by 8th April, 1950, to ALLAN G. HAMILTON, Secretary.
62 Queen's-road, Aberdeen, 16th March, 1950.

AYLESBURY. ROYAL BUCKINGHAMSHIRE HOSPITAL. (136 Beds.) AYLESBURY AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. JUNIOR REGISTRAR (B1), Orthopædic and Accident Service. Duties also include general administration of all surgical beds and charge of Casualty Department under a Visiting Consultant. Suitable for candidate working for F.R.C.S. Salary £670 p.a., less deduction for residential emoluments. Appointment is not necessarily a resident one but successful candidate will be required to live in close proximity to the Hospital.

Applications, with 2 names for reference, to the Secretary-Superintendent at the Hospital as soon as possible.

AYLESBURY. ROYAL BUCKINGHAMSHIRE HOSPITAL. (136 Beds.) AYLESBURY AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON (A) or (B2) for E.N.T. and Ophthalmic Departments, vacant now. Recognised for D.L.O. and recognition for Diploma in Ophthalmology being sought. National terms of service.

Applications, with 2 names for reference, to Secretary-Superintendent at the Hospital as soon as possible.

BATH. ST. MARTIN'S HOSPITAL. Required, House Surgeon (B2), gynæcology and obstetrics. Salary in accordance with the terms and conditions of service of hospital medical and dental staffs.

Applications, stating age, qualifications, and experience, with copies of 3 recent testimonials, to be forwarded by 31st March, 1950, to— J. LAWRENCE MEARS, Secretary,
Bath Hospital Management Committee.
Manor Hospital, Bath.

BATLEY AND DISTRICT GENERAL HOSPITAL. (102 Beds.) Required, HOUSE OFFICER (Assistant Resident Medical Officer), post now vacant. Salary according to experience in accordance with National Health Service scale.

Applications, with copies of 3 recent testimonials, should be forwarded to— G. W. BATCHELOR, Secretary,
Hospital Management Committee No. 11.
20, Oxford-road, Dewsbury.

BEBINGTON, WIRRAL. CLATTERBRIDGE GENERAL HOS-PITAL. (672 Beds.) HOUSE SURGEON (A) or (B2), orthopædics. Appointment for 6 months. Salary £350–£450 p.a., according to experience, less £100 p.a. residence.

Applications, with names of 2 referees, to Medical Superintendent.

BEXHILL HOSPITAL. Required, House Surgeon (A), post now vacant at above Hospital. Appointment for 6 months. Salary £350 p.a., less deduction of £100 p.a., for full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply.

Applications, with copies of recent testimonials, to be sent to the Administrator, Bexhill Hospital, Bexhill-on-Sea, Sussex.
H. A. FROGGATT, Secretary,
Hospital Management Committee (Hastings Group).
11, Holmesdale-gardens, Hastings.

BILLERICAY. ST. ANDREW'S HOSPITAL. Required, House SURGEON (B2). Appointment for 6 months. Salary £350–£450 p.a., according to experience, less £100 in respect of full residential emoluments. Applications from R practitioners holding A posts may be accepted.

Applications, with copies of 3 recent testimonials, should be forwarded as soon as possible to—
G. E. WHYTE, Deputy Secretary,
South East Essex Hospital Management Committee.
Secretary's Office, Thurrock Hospital, Grays, Essex.

BINGLEY HOSPITAL, Bingley, Yorkshire, West Riding. (48 Beds). Required, HOUSE SURGEON (B2), post now vacant. 6 months' appointment. Salary in accordance with the National Health Service terms and conditions of hospital medical and dental staffs (England and Wales). R practitioners holding A posts and newly qualified practitioners may apply.

Applications, stating age, qualifications, experience, and nationality, with copies of recent testimonials, to be forwarded as soon as possible to the Secretary, Bingley, Keighley, Skipton and Settle Hospital Management Committee, Administrative Offices, St. John's Hospital, Fell-lane, Keighley. Canvassing in any form is prohibited.

BARROW AND FURNESS HOSPITAL MANAGEMENT COMMITTEE invite applications from registered medical practitioners for post of JUNIOR ANÆSTHETIC REGISTRAR (B1) for duties in the North Lonsdale Hospital, Barrow-in-Furness, and if so required, other hospitals in the group. Applicants should have had experience in the administration of anæsthetics. Salary £670 p.a., less £100 p.a. for residential emoluments if so provided, and conditions of service in accordance with National Health Service conditions for hospital medical staff. Appointment may be either resident or non-resident.

Applications, stating age, qualifications, nationality, and experience, with copies of 2 recent testimonials, should be forwarded to the Secretary, Barrow and Furness Hospital Management Committee, 52, Paradise-street, Barrow-in-Furness.

BEDFORD. ST. PETER'S HOSPITAL. Required, Resident OBSTETRIC AND GYNÆCOLOGICAL HOUSE SURGEON (B2), Male or Female, to commence immediately. Appointment for 6 months. Salary £400–£450 p.a., less £100 for residential emoluments.

Applications, stating age, nationality, qualifications, previous appointments, and names of 3 persons to whom reference may be made, if desired, should be addressed to the Secretary, Bedford Group Hospital Management Committee, St. Peter's Hospital, Bedford.

BIRMINGHAM. THE CHILDREN'S HOSPITAL, King Edward VII MEMORIAL, Ladywood-road, BIRMINGHAM, 16. THE UNITED BIRMINGHAM HOSPITALS. Applications invited from registered medical practitioners for appointment of MEDICAL REGISTRAR (B1), non-resident, in the grade of Junior Registrar or Registrar. Duties to begin as soon as possible. Applicants must have had training and experience in pædiatrics and be Members of the Royal College of Physicians, London. Successful applicant required to work in the University Professorial Department of Pædiatrics and Child Health in the Children's Hospital and to take part in research work and undergraduate teaching. Appointment for 1 year in the first instance, and subject to National Health Service superannuation regulations. R practitioners eligible for H.M. Forces holding B1 appointments not considered.

Forms of application may be obtained from undersigned and should be returned, with names of 3 referees, by 6th April, 1950. N. R. WINWOOD, House Governor.

BIRMINGHAM. UNITED BIRMINGHAM HOSPITALS. Required, HOUSE SURGEON (A) or (B2) in the Urological Department. Appointment for 3 months from 1st April, 1950. Salary in accordance with Ministry of Health scale.

Applications, stating age, qualifications, experience, nationality, and present post, with copies of 3 recent testimonials, should be sent at once to G. HURFORD, Secretary.

Queen Elizabeth Hospital, Birmingham, 15.

BIRMINGHAM. THE UNITED BIRMINGHAM HOSPITALS. Applications invited for post of Whole-time REGISTRAR (B1), non-resident, to the Casualty Department. Salary in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales) for Officers of the grade of Junior Registrar. Candidates must be registered medical practitioners and preference given to those holding a higher qualification.

Applications, stating age, qualifications, experience, nationality and present post, with copies of 3 recent testimonials, should be sent by 11th April, to—

G. HURFORD, Secretary, United Birmingham Hospitals.
The Queen Elizabeth Hospital, Birmingham, 15,
9th March, 1950.

BIRMINGHAM. THE UNITED BIRMINGHAM HOSPITALS. Applications invited for post of RESIDENT ANÆSTHETIC REGISTRAR (B1) Senior grade. Salary in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales). Candidates must possess the D.A. and have experience in anæsthesia for all branches of surgery.

Applications, stating nationality, age, qualifications, and details of present and previous appointments with dates, with names of 3 persons, to whom reference may be made, should be sent by 15th April to—

G. HURFORD, Secretary, United Birmingham Hospitals.
The Queen Elizabeth Hospital, Birmingham, 15,
10th March, 1950.

BIRMINGHAM ACCIDENT HOSPITAL AND REHABILITATION CENTRE. (209 Beds.) BIRMINGHAM (SELLY OAK) HOSPITAL MANAGEMENT COMMITTEE, GROUP NO. 25. Applications invited from medical practitioners, Male and Female, for appointment of REGISTRAR, vacant 1st April. Appointment for 2 years. Salary £775 or £890 p.a., according to experience, less £140 p.a. for board and lodging. Applications from practitioners holding B1 appointments cannot be considered unless ineligible for H.M. Forces.

Applications to be addressed to Acting Secretary, Birmingham Accident Hospital, Bath-row, Birmingham, 15.

BIRMINGHAM ACCIDENT HOSPITAL AND REHABILITATION CENTRE. (209 Beds.) BIRMINGHAM (SELLY OAK) HOSPITAL MANAGEMENT COMMITTEE, GROUP NO. 25. Applications invited from medical practitioners, Male and Female, for appointment of JUNIOR REGISTRAR, vacant 1st April. Appointment for 1 year. Salary £670 p.a., less £140 p.a. for board and lodging. Applications from practitioners holding B1 appointments cannot be considered unless ineligible for H.M. Forces.

Applications to Acting Secretary, Birmingham Accident Hospital, Bath-row, Birmingham, 15.

BIRMINGHAM ACCIDENT HOSPITAL AND REHABILITATION CENTRE, Bath-row, BIRMINGHAM, 15. (209 Beds.) BIRMINGHAM (SELLY OAK) HOSPITAL MANAGEMENT COMMITTEE GROUP NO. 25. Required, HOUSE SURGEON (A) or (B2), Male or Female, post vacant 1st April. Salary £350, £400, or £450 p.a., according to experience, less £100 p.a. for board and lodging. Appointment in the first place for 6 months.

Applications to be sent to the Acting Secretary.

BIRMINGHAM ACCIDENT HOSPITAL AND REHABILITATION CENTRE. (209 Beds.) BIRMINGHAM (SELLY OAK) HOSPITAL MANAGEMENT COMMITTEE, GROUP NO. 25. Applications invited for appointment of HOUSE SURGEON (B2), Male or Female, now vacant, to care for patients in association with the Medical Research Council Industrial Medicine and Burns Research Units. Salary £400 or £450 p.a., according to experience, less £100 p.a. for board and lodging. Appointment for 6 months, with subsequent opportunities for Research or Surgical Registrar post.

Applications to be addressed to the Acting Secretary, Birmingham Accident Hospital, Bath-row, Birmingham, 15.

BIRMINGHAM. YARDLEY GREEN HOSPITAL. Thoracic SURGICAL DEPARTMENT. Required, RESIDENT REGISTRAR. Candidates should have had good experience of general surgery and should hold a higher surgical qualification. Appointment will give broad opportunities for experience in thoracic surgery both in tuberculous and non-tuberculous disease. Salary and conditions of service in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales)—i.e., £775 for first year, and £890 for second and subsequent years, less residential emoluments. Successful applicant required to pass a medical examination and appointment subject to the terms of the National Health Service superannuation scheme.

Applications, stating age, qualifications, training, and experience, with copies of 3 recent testimonials, should be addressed to the Secretary, Birmingham (Sanatoria) Group Hospital Management Committee, Yardley Green Hospital, Birmingham 9, not later than 14 days from publication of this advertisement.

BIRMINGHAM. YARDLEY GREEN HOSPITAL. (413 Beds.) Required, Whole-time REGISTRAR. Successful applicant will reside at above Hospital (accommodation for single person only), but will undertake duties at the Chest Clinic, Great Charles-street, Birmingham 3, as required. Arrangements will also be made for experience in the Thoracic Surgical Centre of the group. Applicants should have had previous experience in the treatment of tuberculosis. Salary and conditions of service in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales)—i.e., £775 for first year, and £890 for second and subsequent years, less residential emoluments. Post subject to National Health Service superannuation regulations.

Applications, stating age, qualifications, training, and experience, with copies of 3 recent testimonials, should be addressed to the Secretary, Birmingham (Sanatoria) Group Hospital Management Committee, Yardley Green Hospital, Birmingham, 9, not later than 14 days from publication of this advertisement.

BISHOP AUCKLAND. THE GENERAL HOSPITAL. South WEST DURHAM HOSPITAL MANAGEMENT COMMITTEE. 2 HOUSE SURGEONS (A) or (B2) required immediately for general surgical, orthopædic, and casualty duties. Salary £350–£450 p.a., according to previous posts held, less £100 p.a. for full residential emoluments.

Applications, stating age, qualifications, and experience, with copies of 1–3 testimonials, should be sent to the Medical Superintendent.

BISHOP AUCKLAND. THE GENERAL HOSPITAL. South WEST DURHAM HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE PHYSICIAN (A) or (B2), post includes casualty duties. Salary £350–£450 p.a., according to previous posts held, less £100 p.a. for full residential emoluments.

Applications, stating age, qualifications, and experience, with copies of 1–3 testimonials, should be sent to the Medical Superintendent.

BISHOP'S STORTFORD, HERTS. HAYMEADS HOSPITAL (300 occupied Beds.) RESIDENT HOUSE OFFICER (Male), medical. Appointment vacant 1st April, 1950, for 6 months. Salary £350–£450 p.a., according to experience (A or B2 post), subject to a deduction of £100 p.a. for residential emoluments.

Applications, stating age, nationality, qualifications, and experience, with copies of testimonials and/or names of referees, to the Administrative Officer, Haymeads Hospital, Bishop's Stortford, Herts.

BLACKPOOL AND FYLDE HOSPITAL MANAGEMENT COMMITTEE invite applications from registered medical practitioners for the post of JUNIOR REGISTRAR, Anæsthetic Department, for duties in the Victoria Hospital, Blackpool, and other hospitals in the group. Applicants should have had experience in the administration of anæsthetics and the possession of the D.A. (not essential) would be an advantage. Appointment for 1 year and is non-resident. Salary £670 p.a. Conditions of service in accordance with the Ministry's recommendations.

Applications, stating age, nationality, and experience, with copies of 3 recent testimonials, should be sent to the Secretary, Blackpool and Fylde Hospital Management Committee, Victoria Hospital, Whinney Heys-road, Blackpool.

W. R. SMITH, Secretary.

BOLTON ROYAL INFIRMARY. (250 Beds—Junior Medical Establishment of 10.) Applications invited from registered medical practitioners, Male, for appointment of SURGICAL REGISTRAR (B1), Resident Surgical Officer, at above Hospital, post vacant beginning of April. Tenable for 2 years. Preference given to candidates holding a higher surgical qualification. Applications from practitioners holding B1 posts cannot be considered unless ineligible for H.M. Forces. Post may be generally non-resident but successful candidate will be required to live in for emergency turns of duty. Salary and conditions of service in accordance with the terms issued by the Ministry of Health.

Applications, stating age, nationality, qualifications, and experience, with copies of recent testimonials, should be forwarded to undersigned at the Royal Infirmary, Bolton, by 5th April, 1950. H. P. TRAVIS, Secretary,

Bolton and District Hospital Management Committee.

BOLTON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications invited from registered medical practitioners, Male and Female, for following appointments :—

Townleys Hospital (510 Beds—Resident Medical Establishment of 14), Department of Paediatrics

RESIDENT JUNIOR REGISTRAR (B1), vacant April. Post tenable for 12 months. Candidates should possess the D.C.H. Duties will include supervision of newborn and premature infants in addition to the care of sick children. Applications from practitioners holding B1 posts cannot be considered unless ineligible for H.M. Forces.

RESIDENT HOUSE PHYSICIAN (A) or (B2), vacant April. Post tenable for 6 months and recognised for the D.C.H. Practitioners, ineligible for H.M. Forces or under 25½ years not having held an A post, considered.

Bolton Royal Infirmary (250 Beds—Resident Medical Establishment of 10)

RESIDENT HOUSE SURGEON (A) or (B2), vacant immediately. Post tenable for 6 months and duties will include ophthalmic work and Special Departments in addition to general surgery. Practitioners, ineligible for H.M. Forces or under 25½ years not having held an A post, considered.

Salaries and conditions of service for all appointments in accordance with the terms issued by the Ministry of Health.

Applications, stating age, nationality, qualifications and experience, with copies of recent testimonials, should be forwarded to undersigned at the Royal Infirmary, Bolton, by 31st March, 1950. H. P. TRAVIS, Secretary.

BOLTON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications invited from registered medical practitioners, Male and Female, for following appointments :—

Bolton Royal Infirmary (250 Beds—Junior Medical Establishment of 10)

REGISTRAR (B1), Department of Radiology, vacant immediately. Can be resident or non-resident. Approximately 17,500 patients per annum. The possession of a Diploma in Radiology would be an advantage. Post tenable for 2 years.

RESIDENT JUNIOR REGISTRAR (B1), Orthopædic and Casualty Services, vacant immediately. Post tenable for 12 months and will include some general surgical duties.

Applications for either of above appointments from practitioners holding B1 posts cannot be considered unless ineligible for H.M. Forces.

RESIDENT CASUALTY OFFICER (A) or (B2), vacant immediately. Post will include some ophthalmic work in addition to casualty work. Post tenable for 6 months.

Townleys Hospital (510 Beds—Junior Medical Establishment of 14)

HOUSE SURGEON (A) or (B2), for general surgery, vacant immediately. Post tenable for 6 months.

For A or B2 posts practitioners ineligible for H.M. Forces or under 25½ years not having held an A post, considered.

Salaries and conditions of service for all appointments in accordance with the terms issued by the Ministry of Health.

Applications, stating age, nationality, qualifications, and experience, with copies of recent testimonials, should be forwarded to undersigned at the Royal Infirmary, Bolton, as soon as possible. H. P. TRAVIS, Secretary.

BRAINTREE. BLACK NOTLEY HOSPITAL, near Braintree, ESSEX. Required, RESIDENT HOUSE OFFICER (Physician) at above Hospital. Duties will include work on the general medical wards of the Hospital and also in the Paediatric Unit. First, second, or third post, tenable for 6 months. Salary in accordance with recommendations issued by the Ministry of Health.

Applications, with copies of 3 recent testimonials, should be forwarded immediately to—

ERNEST R. HANCHET, Secretary,
Colchester Group Hospital Management Committee.
14, Pope's-lane, Colchester.

BRENTWOOD MENTAL HOSPITAL, Brentwood, Essex. Junior REGISTRAR (Male or Female) required at above Hospital. Appointment affords excellent opportunities for gaining experience in modern methods of psychiatric treatment, and successful applicant will be able to participate in the Regional training scheme. Salary £670 p.a., less £150 p.a. for residential emoluments.

Applications, stating age, experience, &c., with names of 3 referees, to the Physician-Superintendent as soon as possible.

BURNLEY. BANK HALL MATERNITY HOSPITAL. (53 Beds.) RESIDENT OBSTETRICAL OFFICER (B2), Male or Female, vacant 14th April. Candidates must have had previous hospital experience, and experience in midwifery will be an advantage. Salary in accordance with the approved scale.

Applications, with full details and copies of 2 recent testimonials, to be received by 1st April, by J. E. WHEATCROFT, Secretary, Burnley and District Hospital Management Committee, Victoria Hospital, Burnley.

BRADFORD ROYAL INFIRMARY. Registrar Anæsthetist (non-resident) required for the Thoracic Unit for 12 months. Salary £775–£890 p.a., according to experience. Applications from R practitioners holding B1 posts cannot be considered unless ineligible for H.M. Forces.

Applications, stating age, nationality, qualifications, and experience, with copies of recent testimonials, should be forwarded to the Personnel Officer at the Bradford Royal Infirmary.

H. TRUSSON, Secretary,
Bradford A Group Hospital Management Committee.

BRADFORD ROYAL INFIRMARY. (510 Beds.) House Surgeon (B2) required for 6 months for new Thoracic Unit. Salary £400–£450 p.a., according to experience, less £100 p.a. for residential emoluments. R practitioners holding A posts may apply.

Applications, stating age, nationality, qualifications, and experience, with copies of recent testimonials, should be forwarded to— H. TRUSSON, Secretary,
Bradford A Group Hospital Management Committee.

BRADFORD. LEEDS ROAD HOSPITAL. (Hospital for Infectious Diseases, including Tuberculosis—250 Beds.) RESIDENT JUNIOR HOSPITAL MEDICAL OFFICER (B1) required at above Hospital. Salary £700, by annual increments of £50 to £1000 p.a., less a charge of £150 p.a. for full residential emoluments. Experience in the diagnosis and treatment of infectious diseases essential. R practitioners eligible for H.M. Forces not considered.

Applications, giving full particulars of age, qualifications, and details of present and previous appointments, with names of 3 referees, should be sent as soon as possible to—

L. R. LORIMER, Secretary to the
Bradford B Hospital Management Committee.
Midland Buildings, 12, Canal-road, Bradford.

BRIDGEND. MORGANNWG HOSPITAL. Required, Senior REGISTRAR. The Hospital consists of 3 units : Parc and Glanrhyd Hospitals, with approximately 1000 Beds each ; and Penyfai Hospital, a separate Acute Admission Hospital of 120 Beds. Possession of the D.P.M. is necessary. Full facilities will be given to the successful candidate to attend outpatient clinics. Accommodation for a married or single man is available and a deduction from salary will be made in respect of residential emoluments. The terms and conditions of service of hospital medical and dental staffs will apply. Post subject to National Health Service superannuation regulations.

Applications, giving age, qualifications, and details of present and previous appointments with dates, with names of 3 referees, should be received by the Medical Superintendent of the Morgannwg Hospital, Bridgend, by 17th April, 1950. Canvassing will disqualify but this does not preclude candidates from visiting the hospitals. J. B. PARRY, Secretary,
Morgannwg Hospital Management Committee.

BRIGHTON. ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, BRIGHTON. (130 Beds.) Required, RESIDENT HOUSE PHYSICIAN (B2). 6 months' appointment as from 1st May, 1950. Salary £350–£450 p.a. in accordance with recognised scales, less a deduction at rate of £100 p.a. in respect of emoluments. The Hospital is recognised for the D.C.H. and M.D. Examination Branch I.

Applications, stating age, qualifications with dates, and nationality, with copies of recent testimonials, should be sent to the Administrative Officer, Brighton and Lewes Hospital Management Committee, on or before 7th April, 1950.

BRIGHTON. SUSSEX MATERNITY HOSPITAL, Buckingham-road, BRIGHTON. (65 Beds.) Required, RESIDENT HOUSE SURGEON (B2). 6 months' appointment as from 1st May, 1950. Salary £350–£450 p.a. in accordance with recognised scales, less a deduction at rate of £100 p.a. in respect of emoluments. Hospital is recognised for the M.R.C.O.G.

Applications, stating age, qualifications, nationality, and copies of recent testimonials, should be sent to the Administrative Officer, Brighton and Lewes Hospital Management Committee, on or before 7th April, 1950.

BRISTOL. UNITED BRISTOL HOSPITALS invite applications for 4 vacant posts of JUNIOR SURGICAL REGISTRAR. Appointments are whole-time and the main duties will be in the Bristol Royal Infirmary, but the candidates appointed may also be required to perform occasional duties in the other hospitals of the group. Appointments for 1 year. Salary, terms, and conditions of service will be as announced by the Ministry of Health and the posts will be subject to National Health Service superannuation regulations.

Applications, giving full particulars of age, education, qualifications, and experience, and names of 2 referees, should be sent by 11th April, 1950, to Secretary to the Board, Royal Infirmary Branch, Bristol, 2.

BRISTOL. UNITED BRISTOL HOSPITALS invite applications for following posts :—

2 SENIOR SURGICAL REGISTRARS (B1)
2 SURGICAL REGISTRARS (B1).

Appointments are whole-time and the main duties attaching to the posts will be in the Bristol Royal Infirmary, but the candidates appointed may also be required to perform occasional duties in the other hospitals of the group. Normally the holders of these posts are appointed as Tutors in the Department of Surgery in the University of Bristol. Salary and terms and conditions of service will be as announced by the Ministry of Health and the posts will be subject to National Health Service superannuation regulations. Appointments for 1 year in the first instance and will be renewable, the former annually for 2 more years, and the latter for a further period of 1 year.

Applications, giving full christian names, particulars of age, education, qualifications, and experience, and names of 2 referees, should be sent by 11th April, 1950, to Secretary to the Board, Royal Infirmary Branch, Bristol, 2.

BURTON-ON-TRENT. GENERAL INFIRMARY. (Acute General Hospital—235 Beds.) Required, HOUSE SURGEON (B2). Salary in accordance with Ministry of Health scales—i.e., £350–£450 p.a., according to experience.

Applications, with copies of testimonials, to be forwarded immediately to— J. E. SMITH, Secretary to the
Burton-on-Trent Hospital Management Committee.
Burton-on-Trent.

BURY, LANCS. FAIRFIELD GENERAL HOSPITAL. Junior OBSTETRIC REGISTRAR (B1), resident or non-resident. The Hospital contains 679 Beds, mainly chronic sick, with a Maternity Unit of 85 Beds for normal and abnormal cases of upwards of 1000 annually and a Gynæcological Unit of 24 Beds. Tenure of appointment 1 year. Salary, &c., in accordance with the terms and conditions of service for hospital medical and dental staffs (England and Wales)—namely, £670 p.a. non-resident, with deduction of £100 p.a. where the post is resident.

Applications should be forwarded immediately to undersigned from whom further particulars can be obtained.

H. WILKINSON, Secretary, Bury and
Rossendale Hospital Management Committee.
Bury General Hospital, Walmersley-road, Bury, Lancs.

BURY GENERAL HOSPITAL. (An Acute General Hospital of 161 Beds, mainly surgical, with beds for orthopædic and other specialists.) Required, JUNIOR ORTHOPÆDIC REGISTRAR (resident or non-resident). Tenure of appointment 1 year. Salary in accordance with terms and conditions of service for hospital medical and dental staffs (England and Wales)—i.e., £670 p.a., non-resident, with deduction of £100 p.a. where post is resident. R practitioners holding B1 posts not considered unless ineligible for H.M. Forces.

Applications should be forwarded immediately to undersigned, from whom further particulars can be obtained.

H. WILKINSON, Secretary, Bury and Rossendale Hospital Management Committee.

BURY AND ROSSENDALE HOSPITAL MANAGEMENT COMMITTEE. Applications invited from registered medical practitioners, Male or Female, for following appointments: —

Bury General Hospital, Walmersley-road, Bury (with Continuation Hospital, 178 Beds), an acute General Hospital with beds for orthopædic and other specialties

HOUSE SURGEON (A), vacant early in April.

Fairfield General Hospital (679 Beds), a General Hospital catering mainly for chronic cases, but with beds for mental cases, obstetric cases, and gynæcology cases, and including a children's ward

HOUSE PHYSICIAN (A), vacant 31st March.

HOUSE SURGEON (A), gynæcology and obstetrics, now vacant.

All above appointments are open to practitioners within 3 months of qualification and liable under the National Service Acts when appointment will be for 6 months, otherwise renewable. Salary and conditions of service will be in accordance with the terms and conditions of service for hospital medical and dental staffs (England and Wales).

Applications should be forwarded as soon as possible to undersigned, from whom further particulars may be obtained.

H. WILKINSON, Secretary to the Committee.

Bury General Hospital, Walmersley-road, Bury, Lancs.

BURY ST. EDMUNDS. WEST SUFFOLK GENERAL HOSPITAL. (289 Beds.) WEST SUFFOLK HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (A) or (B2) for general surgery. Salary £350 or £400 p.a., less £100 p.a. residential emoluments. Appointment normally for 6 months.

Applications to the House Governor, West Suffolk General Hospital, Bury St. Edmunds.

BURY ST. EDMUNDS. WEST SUFFOLK GENERAL HOSPITAL. (289 Beds.) WEST SUFFOLK HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT ANÆSTHETIST (A) or (B2). Salary £350 or £400 p.a., less £100 p.a. residential emoluments. Appointment normally for 6 months. The Hospital is recognised for the D.A.

Applications to the House Governor, West Suffolk General Hospital, Bury St. Edmunds.

BROXBURN. BANGOUR GENERAL HOSPITAL. Applications invited for post of REGISTRAR ANÆSTHETIST (B1) at above Hospital. Successful applicant will be required to participate in the work of the various Departments of the hospital, including General Surgical, Neurosurgical, Plastic, Orthopædic, Thoracic, and E.N.T. and may be required to be available for work in other hospitals. It is proposed that post be resident but consideration will be given to applicants who prefer to be non-resident, but are prepared to live within reasonable distance of the hospital and be available for emergency calls at night. Post will carry either Registrar or Junior Registrar status according to the previous experience of successful applicant and subject to the terms and conditions of service applicable to hospital medical and dental staffs. This appointment offers wide scope for a person training for the D.A.

Applications, giving age, qualifications, and details of previous experience, should be lodged with the Medical Superintendent, Bangour Hospital, Broxburn, West Lothian, by 8th April, 1950.

CANTERBURY. KENT AND CANTERBURY HOSPITAL. (239 Beds.) CANTERBURY GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications invited from registered medical practitioners for post of E.N.T. AND EYE HOUSE SURGEON (B2), vacant early in April, at above Hospital. Post recognised for the D.L.O. and D.O.M.S. examinations. Duties will include some casualty work. Salary will depend on number of posts held and from which residential emoluments valued at £100 p.a. will be deducted.

Applications, giving full particulars of qualifications and experience, with copies of 3 recent testimonials, should be forwarded as soon as possible to M. D. KAY, Chief Administrative Officer at the Hospital.

CARLISLE. CUMBERLAND INFIRMARY. (354 Beds.) Applications invited from registered medical practitioners for following resident (A) or (B2) posts, vacant 1st April, 1950 :—

3 HOUSE OFFICERS (general surgery).

HOUSE OFFICER (gynæcology).

HOUSE OFFICER (Orthopædic and Fracture Department).

"SPECIALS" HOUSE OFFICER (E.N.T. and Ophthalmic Departments).

Appointments, which are for 6 months, are subject to the terms and conditions of service of hospital medical and dental staffs (England and Wales). Salaries within range £350–£450 p.a., according to experience, with a deduction of £100 p.a. in respect of board and lodging and other services provided.

Applications should be submitted immediately to—

A. PICKERING, Secretary, East Cumberland Hospital Management Committee. Cumberland Infirmary, Carlisle.

CHATHAM. ALL SAINTS' HOSPITAL. (416 Beds.) Medway and GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (A), post now vacant. Appointment tenable for 6 months. Salary £350 p.a., less £100 p.a. residential emoluments.

Applications, stating age, nationality, qualifications, and experience, with copies of recent testimonials, to be forwarded to the Surgeon-Superintendent immediately.

CARMARTHEN. WEST WALES GENERAL HOSPITAL. (134 Beds.) Applications invited for appointments of :—

HOUSE SURGEON (A). HOUSE PHYSICIAN (A).

6 months' appointment. Salary in accordance with National Health Service scale, full residential emoluments. R practitioners within 3 months of qualification may apply.

Applications to be sent to—

A. W. YOUNGS, Secretary, West Wales Hospital Management Committee. Glangwili, Carmarthen.

CHELMSFORD AND ESSEX HOSPITAL, Chelmsford. (159 Beds.) HOUSE PHYSICIAN (A), required to commence beginning of April. Salary according to National Health Service scale.

Apply to Secretary, Hospital Management Committee—Chelmsford Group, London-road, Chelmsford.

CHELMSFORD. BROOMFIELD HOSPITAL. North East Metro-POLITAN REGIONAL HOSPITAL BOARD. MEDICAL REGISTRAR (resident) required at above Hospital for 12 months. 300 pulmonary tuberculosis beds including thoracic surgery.

Apply Physician-Superintendent.

CHELMSFORD GROUP 18, HOSPITAL MANAGEMENT COM-MITTEE invite applications from registered medical practitioners for post of SURGICAL REGISTRAR (B1) in the grade of Registrar. Post will be non-resident, but an unfurnished flat of 4 rooms, adjacent to the Hospital, is available. Appointee will work mainly at the Chelmsford and Essex Hospital. Salary in accordance with the terms and conditions of service of hospital medical and dental staffs. Appointment for 1 year in the first instance and renewable yearly. Preference given to the holder of a higher surgical qualification, and to one who has had operating experience. Successful candidate will be required to take up his appointment on 9th May, 1950.

Applications, stating age, nationality, qualifications with dates, experience, and names of 3 referees, should be sent by 11th April, 1950, to—

R. G. MORRISH, Secretary, Hospital Management Committee, Chelmsford Group 18. London-road, Chelmsford.

CHERTSEY, SURREY. ST. PETER'S HOSPITAL (late Botleys Park War Hospital). (413 Beds.) Required, RESIDENT HOUSE SURGEON for the Gynæcological and Special (E.N.T., &c.) Departments. Salary in accordance with terms and conditions issued by the Ministry of Health.

Applications, stating age, qualifications, and experience, if any, with testimonials or names of referees, should be sent to the Physician-Superintendent, St. Peter's Hospital, as soon as possible.

CHERTSEY, SURREY. ST. PETER'S HOSPITAL (late Botleys Park War Hospital). (413 Beds.) WOKING AND CHERTSEY GROUP HOSPITAL MANAGEMENT COMMITTEE. Required HOUSE SURGEON (A) or (B2) for Orthopædic Department. (130 Beds.) Appointment is very suitable for candidates reading for a higher surgical qualification and is recognised by the Royal College of Surgeons for the F.R.C.S. Salary in accordance with terms and conditions of service issued by the Ministry of Health.

Applications, with names and addresses of referees, to be sent to the Physician-Superintendent, St. Peter's Hospital, as soon as possible.

CHESTERFIELD AND NORTH DERBYSHIRE ROYAL HOS-PITAL. HOUSE SURGEON required 24th March for 6 months' appointment. Ministry of Health salary and conditions of service.

Applications, stating age, qualifications, and experience, with names and addresses of 3 referees, to be forwarded to M. H. BOONE, Secretary, Chesterfield Hospital Management Committee, Royal Hospital, Chesterfield, immediately.

COATBRIDGE, AIRDRIE AND DISTRICT HOSPITALS BOARD OF MANAGEMENT invite applications for a resident post (Female) as JUNIOR HOSPITAL MEDICAL OFFICER at Longriggend Sanatorium, by Greengairs, with other duty as required at other hospitals in the area. Possession of a car an advantage.

Applications, giving details of age, qualifications, and experience, particularly in the field of tuberculosis, and giving also names of 3 referees, should be lodged by 10th April with the Secretary and Treasurer Board of Management, Hairmyres Hospital, East Kilbride.

COLCHESTER. MYLAND HOSPITAL, Mill-road, Colchester. Required, RESIDENT HOUSE PHYSICIAN (Male or Female) at above Hospital. Duties will primarily be for medical and surgical cases, but there will also be some duties in the infectious diseases wards. First, second, or third post, tenable for 6 months. Salary in accordance with recommendations issued by the Ministry of Health.

Applications, with copies of 3 recent testimonials, should be forwarded immediately to—

ERNEST R. HANCHET, Secretary, Colchester Group Hospital Management Committee. 14, Pope's-lane, Colchester.

COTTINGHAM, E. YORKS. CASTLE HILL HOSPITAL AND SANATORIUM. NO. 5 HOSPITAL MANAGEMENT COMMITTEE, HULL B GROUP. Applications invited for appointment of whole-time RESIDENT MEDICAL OFFICER for the above Hospital and Sanatorium. Appointment is open to registered medical practitioners of either sex and previous experience in a fever hospital or sanatorium would be an advantage. Appointment, which is graded Junior Hospital Medical Officer, will be subject to the recently agreed terms and conditions of service of hospital medical and dental staffs, and will be subject to the passing of a medical examination and to the provisions of the National Health Service superannuation regulations.

Applications, stating age, qualifications, details of experience, with names of 3 referees, should be forwarded to the Secretary, No. 5 Hospital Management Committee, Hull B Group, Castle Hill, Cottingham, E. Yorks, as early as possible. Canvassing in any form, either directly or indirectly, will disqualify.

CHICHESTER, SUSSEX. ST. RICHARD'S HOSPITAL. (400 Beds.) Required, HOUSE PHYSICIAN (Male or Female) for 6 months only in the first instance, post vacant end of April. Salary £250 p.a., with full residential emoluments. Appointee will work primarily in the Medical Wards of the Hospital, but must be prepared to undertake other work if requested by the Surgeon-Superintendent.

Applications, stating age, qualifications, and experience, giving names of 2 persons to whom reference may be made, should be sent to the Surgeon-Superintendent immediately.

COVENTRY GROUP NO. 20 HOSPITAL MANAGEMENT COMMITTEE. Applications invited for under-mentioned posts. National scale of salaries :—

Coventry and Warwickshire Hospital (346 Beds)

SENIOR REGISTRAR to the E.N.T. Department. Must be appropriately qualified and experienced.

JUNIOR REGISTRAR ANÆSTHETIST (B1), now vacant. Hospital recognised for D.A.

JUNIOR REGISTRAR (surgical) in Central Accident Department, vacant early April.

HOUSE SURGEON (A) or (B2), general surgical, vacant 1st April, 1950.

HOUSE SURGEON (Central Accident Unit), inpatients and outpatients, vacant 21st April, 1950.

Manor Hospital, Nuneaton (155 Beds—31 Maternity)

HOUSE SURGEON (A) or (B2) to the Casualty, E.N.T., and Ophthalmic Departments, vacant 31st March, 1950.

OBSTETRIC AND GYNÆCOLOGICAL HOUSE SURGEON (A) or (B2), vacant 9th April.

HOUSE PHYSICIAN (A) or (B2), vacant 24th April, 1950.

Gulson Hospital, Coventry (335 Beds)

HOUSE PHYSICIAN (A) or (B2), vacant 17th April, 1950.

HOUSE PHYSICIAN (A) or (B2), pædiatrics, vacant 2nd May, 1950. Hospital recognised for D.C.H.

HOUSE SURGEON (A) or (B2), obstetric and gynæcological, vacant 1st May, 1950.

Applications, stating age, nationality, qualifications, and experience, with copies of recent testimonials, to the Secretary, Group 20 Hospital Management Committee, Coventry and Warwickshire Hospital, Coventry.

CROSS HOUSES HOSPITAL, near Shrewsbury. (183 Beds.) Required, 2 RESIDENT MEDICAL OFFICERS (B1). Preference given to those applicants with previous obstetrical experience. Salary, according to previous post(s) held, £350, £400, or £450 p.a., with a deduction of £100 p.a. in each case for residential emoluments. Suitably qualified R practitioners holding B2 appointments are invited to apply.

Applications, stating age, qualifications, nationality, and experience, with copy testimonials, should be sent to the Medical Superintendent, Cross Houses Hospital, Cross Houses, near Shrewsbury. J. P. MALLETT, Secretary,

Shrewsbury Group 15 Hospital Management Committee.

Royal Salop Infirmary, Shrewsbury, 30th September, 1949.

DAGENHAM HOSPITAL, Dagenham, Essex. Required, Resident SENIOR REGISTRAR. The Hospital accommodates at present 128 Beds for pulmonary tuberculosis, all stages. Candidates, besides previous general hospital appointments, must be experienced in all modern treatments of pulmonary tuberculosis. Preference given to candidates holding or reading for higher qualifications. Salary £1000–£1300 p.a., according to experience, less emoluments valued at £150.

Applications, with full details of previous experience, with copies of recent testimonials, should be sent to undersigned within 2 weeks of publication of this advertisement. Further particulars may be obtained from the Secretary (VALentine 1046). G. AUSTIN HEPWORTH, Secretary, Ilford and

Barking Group Hospital Management Committee.

King George Hospital, Ilford.

DARLINGTON MEMORIAL HOSPITAL. (210 Beds.) Required, HOUSE SURGEON (resident), post now vacant. Salary in accordance with national scale.

Apply, giving age and references, to—

G. W. BECKWITH, Secretary,

Darlington District Hospital Management Committee.

DARTFORD. THE WEST HILL HOSPITAL. House Officer (A) required for Casualty Department at above Hospital. Appointment limited to 6 months. Salary £350 a year, with deductions at rate of £100 a year in respect of full residential emoluments provided. R practitioners within 3 months of qualification or ineligible for H.M. Forces, considered.

Applications, stating age, qualifications, experience, nationality, and names of 2 persons to whom reference may be made, should be sent to the Surgeon-Superintendent, The West Hill Hospital, Dartford, Kent.

DAVYHULME PARK HOSPITAL. (General Hospital—500 Beds.) WEST MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Required OBSTETRICAL HOUSE OFFICER (A) or (B2). 6 months' appointment. Salary in accordance with the terms of service issued by the Ministry of Health. £100 p.a. will be deducted for residential accommodation and services. The Hospital is recognised for training for the D.Obst. R.C.O.G. examination. Vacancies in the various departments occur periodically at Park Hospital and Obstetrical House Officers are eligible for appointment to the posts of House Officers (general medicine and surgery) at the end of the term of service as Obstetrical House Officer when such vacancies exist.

Application forms, which must be returned by 7th April, 1950, may be obtained from the Secretary.

DEWSBURY. STAINCLIFFE GENERAL HOSPITAL. (316 Beds.) Required, JUNIOR REGISTRAR (B1), anæsthetics. Post tenable for 1 year, vacant 1st June, 1950. Salary £670 p.a., less deduction for residential emoluments.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, should be forwarded as early as possible to— G. W. BATCHELOR, Secretary,

Hospital Management Committee No. 11.

20, Oxford-road, Dewsbury.

DEWSBURY. STAINCLIFFE GENERAL HOSPITAL. (316 Beds.) Required, JUNIOR REGISTRAR (B1), anæsthetics. Post tenable for 1 year, vacant 31st March, 1950. Salary £670 p.a., less deduction for residential emoluments.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, should be forwarded to undersigned as early as possible. G. W. BATCHELOR, Secretary,

Hospital Management Committee No. 11,

Dewsbury, Batley and Mirfield Group.

20, Oxford-road, Dewsbury.

DEWSBURY. STAINCLIFFE GENERAL HOSPITAL. (316 Beds.) Applications invited for following resident appointments, tenable for 6 months :—

HOUSE OFFICER (surgical), vacant immediately.

HOUSE OFFICER (dermatology), vacant 22nd May, 1950.

HOUSE OFFICER (pædiatrics), vacant 30th April, 1950.

HOUSE OFFICER (Obstetrics and Gynæcology), vacant 19th April, 1950.

Salary in accordance with the terms and conditions of service of hospital medical and dental staffs.

Applications, with copies of 3 recent testimonials, should be forwarded to— G. W. BATCHELOR, Secretary,

Hospital Management Committee No. 11.

20, Oxford-road, Dewsbury.

DEWSBURY AND DISTRICT GENERAL INFIRMARY. Required, JUNIOR REGISTRAR (surgical). Duties will be to act as Casualty Officer, assist the Surgical Registrar, and take charge of surgical records. Salary £670 p.a., less deduction for residential emoluments.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, should be forwarded to undersigned as soon as possible. G. W. BATCHELOR, Secretary,

Hospital Management Committee No. 11,

Dewsbury, Batley and Mirfield Group.

20, Oxford-road, Dewsbury.

DEVIZES. ROUNDWAY HOSPITAL FOR NERVOUS AND MENTAL DISEASES. (1350 Beds.) ROUNDWAY HOSPITAL MANAGEMENT COMMITTEE (GROUP 16). Required, JUNIOR HOSPITAL MEDICAL OFFICER (B1). Salary £700–£50–£1000 p.a. If resident, charges for board and lodging are £150 p.a. Hospital is an approved training school for the R.M.P.A. Diploma in Psychological Medicine. The Hospital provides opportunities for experience in all modern forms of treatment and is responsible for four outpatient clinics.

Applications, giving particulars of age, qualifications, experience, with copies of recent testimonials, to be sent to the Medical Superintendent as soon as possible.

DONCASTER HOSPITAL MANAGEMENT COMMITTEE invite applications from registered medical practitioners for appointment of a JUNIOR RESIDENT OBSTETRICAL OFFICER (A) or (B2) at Hamilton Annexe, Doncaster. Post recognised under the regulations for the D.Obst. R.C.O.G. Appointment for 6 months. Salary £350 p.a. A, or £400 p.a. B2, with a deduction at rate of £100 p.a. for residential emoluments. R practitioners within 3 months of qualification or holding A posts may apply.

Applications, stating age, nationality, qualifications, and experience, with copies of 2 testimonials, should be forwarded immediately to the Secretary to the Committee, c/o Doncaster Royal Infirmary.

DONCASTER ROYAL INFIRMARY. (330 Beds—recognised under the Regulations for the Examinations of the R.C.S.) Required, HOUSE SURGEON (A) or (B2). Salary £350 p.a. A or £400 p.a. B2, from which a deduction at rate of £100 p.a. will be made for board, residence, &c. R practitioners, ineligible for H.M. Forces or under 25½ years not having held an A post, will be considered.

Applications, stating age, qualifications with dates, nationality, and present post, with copies of 3 recent testimonials, should be forwarded immediately to—

ARTHUR JONES, Secretary,

Doncaster Hospital Management Committee.

c/o Doncaster Royal Infirmary.

DONCASTER ROYAL INFIRMARY. (330 Beds.) Required, ORTHOPÆDIC HOUSE SURGEON (A) or (B2). Salary £350 p.a. A or £400 p.a. B2, from which a deduction at rate of £100 p.a. will be made for board, residence, &c. R practitioners, ineligible for H.M. Forces or under 25½ years of age not having held an A post, will be considered.

Applications, stating age, qualifications with dates, nationality, and present post, with copies of 3 recent testimonials, should be forwarded immediately to—

ARTHUR JONES, Secretary,

Doncaster Hospital Management Committee.

c/o Doncaster Royal Infirmary.

DONCASTER ROYAL INFIRMARY. (330 Beds—recognised under the Regulations for the D.L.O. and D.O.M.S.) Required, HOUSE SURGEON (A) or (B2) to the E.N.T. and Ophthalmic Departments. Salary £350 p.a. A or £400 p.a. B2, from which a deduction at rate of £100 p.a. will be made for board, residence, &c. R practitioners, ineligible for H.M. Forces or under 25½ years not having held an A post, will be considered.

Applications, stating age, qualifications with dates, nationality, and present post, with copies of 3 recent testimonials, should be forwarded immediately to—

ARTHUR JONES, Secretary,

Doncaster Hospital Management Committee.

c/o Doncaster Royal Infirmary.

DUMFRIES. ROYAL INFIRMARY. (265 Beds.) Dumfries AND GALLOWAY HOSPITAL BOARD. RESIDENT HOUSE SURGEON (A) or (B2), orthopædic, Male or Female. Appointment for 6 months. Area population 146,000 (45 orthopædic beds).

Applications, giving age, qualifications, and copies of 3 testimonials, to Group Medical Superintendent, Royal Infirmary, Dumfries.

DERBY. DERWENT HOSPITAL. (187 Beds.) Derby No. 2 Hospital Management Committee. Required, RESIDENT JUNIOR REGISTRAR (B1) at above Hospital. The Hospital provides 100 beds for cases of pulmonary tuberculosis and 87 beds for infectious diseases. Another Hospital of 50 Beds for infectious diseases and pulmonary tuberculosis, some 7 miles away, is also under the same Medical Control. There is an X-ray Department, Operating Theatre, Laboratory, and a Gastro-enteritis Unit, and a thoracic surgery session is held weekly. Salary £670 p.a., less £150 p.a. for residential emoluments.

Applications, stating age, nationality, qualifications, and experience, with copies of 2 recent testimonials, should be sent to the Medical Superintendent, Derwent Hospital, Derby, 8th April, 1950.

DORCHESTER. DORSET COUNTY HOSPITAL. (125 Beds.) Required, HOUSE SURGEON (A) or (B2), Male, post vacant 1st May, 1950. Post tenable for 6 months. Appropriate Ministry of Health scales of salary will be payable, with a deduction of £100 p.a. for residence. R practitioners within 3 months of qualification or holding A posts may apply.

Applications, giving age, qualifications, and nationality, with experience and copies of testimonials, should be sent to the Secretary, West Dorset Group Hospital Management Committee, Damers-road, Dorchester, Dorset, by 31st March, 1950.

DRIFFIELD, E. YORKS. NORTHFIELD SANATORIUM. (80 Beds.) JUNIOR MEDICAL REGISTRAR required. Salary £670 p.a., in accordance with the terms and conditions of hospital medical and dental staffs (England and Wales). If resident a charge will be made in respect of board, lodging, and other services provided. Appointment for 1 year in the first instance.

Applications, stating age, qualifications, and experience, and enclosing copies of 2 recent testimonials, should be addressed to the Secretary, East Riding Group Hospital Management Committee, Westwood Hospital, Beverley, Yorks.

DUDLEY. THE GUEST HOSPITAL. (154 Beds.) Dudley, Stourbridge and District Hospital Group, Birmingham Region. Required, HOUSE OFFICER (A) or (B2), resident, casualty. Post now vacant and tenable for 6 months. Salary £350–£450 p.a., according to the number of posts previously held. A deduction of £100 p.a. in respect of residential emoluments will be made. R practitioners within 3 months of qualification or holding A posts may apply.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments with copies of 3 recent testimonials to—

H. RAYMOND HURST,
Secretary to the Management Committee.
The Guest Hospital, Dudley.

DUDLEY. THE GUEST HOSPITAL. (154 Beds.) Dudley, Stourbridge and District Hospital Group, Birmingham Region. Required, RESIDENT SURGICAL OFFICER (B1), at above Hospital, post now vacant. Applicants should have held house appointments and had surgical experience. Preference given to candidates holding the Fellowship of one of the Royal Colleges. Post will be of Registrar status and salary at rate prescribed by the Minister for the appropriate grade. A deduction of £150 p.a. in respect of residential emoluments will be made. The period of the post will be in accordance with the grade. Applications from R practitioners holding B1 posts cannot be considered unless they are ineligible for H.M. Forces.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, with copies of 3 recent testimonials, to H. RAYMOND HURST, Secretary of the Management Committee, The Guest Hospital, Dudley.

DUDLEY. THE GUEST HOSPITAL. (154 Beds.) Dudley, Stourbridge and District Hospital Group, Birmingham Region. Required, JUNIOR REGISTRAR (B1), resident surgical, post now vacant. The Hospital is recognised for F.R.C.S. Applicants should have held house appointments and have had surgical experience. Salary £670 p.a., less a deduction of £150 p.a. in respect of residential emoluments. Applications from R practitioners holding B1 posts cannot be considered unless they are ineligible for H.M. Forces.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, with copies of 3 recent testimonials, to—

H. RAYMOND HURST,
Secretary to the Management Committee.
The Guest Hospital, Dudley, Worcs.

DUDLEY. THE GUEST HOSPITAL. (154 Beds.) Dudley, Stourbridge and District Hospital Group, Birmingham Region. Required, HOUSE OFFICER (Resident Anæsthetist) (A) or (B2), post now vacant and tenable for 6 months. Hospital is recognised for the D.A. Salary £350–£450 p.a., according to the number of posts previously held. A deduction of £100 p.a. in respect of residential emoluments will be made. R practitioners within 3 months of qualification or holding A posts may apply.

Applications, stating age, nationality, qualifications with dates, with copies of 3 recent testimonials, to H. RAYMOND HURST, Secretary to the Management Committee, The Guest Hospital, Dudley, Worcs.

EDGWARE CHEST CLINIC. Required, Registrar (B1) at above Clinic, with some duties at Edgware General Hospital. Applicants should have a sound knowledge of general medicine and experience in chest work will be a recommendation. Salary £775 first year and £890 second year. Appointment for 1 year in first instance, renewable for a second year. Practitioners holding B1 posts cannot be considered unless ineligible for H.M. Forces.

Apply giving full particulars, with names of 2 referees, to the Group Secretary, Hendon Group Hospital Management Committee, Edgware General Hospital, Edgware, Middlesex, by 8th April, 1950.

EDGWARE GENERAL (formerly Redhill County) HOSPITAL, Edgware, Middlesex. RESIDENT PÆDIATRIC HOUSE PHYSICIAN (B2) required, post vacant 1st May, 1950. 6 months' appointment. Salary £400–£450 p.a., according to experience. Deduction of £100 p.a., for board, lodging, &c. Post recognised for D.C.H. Practitioners holding B2 posts cannot be considered unless ineligible for H.M. Forces.

Applications, stating age, qualifications, experience, and enclosing copies of up to 3 recent testimonials, to Medical Director of Hospital by 1st April, 1950. Candidates selected for interview will be notified by 8th April, 1950.

EAST KILBRIDE, LANARKSHIRE. HAIRMYRES HOSPITAL. Required, RESIDENT HOUSE SURGEON in the Thoracic Unit. Salary, according to experience, £350–£450 p.a., less deduction of £100 p.a. for full residential emoluments.

Applications, with full details and copies of testimonials, to be forwarded immediately to the Physician-Superintendent.

ECCLES AND PATRICROFT HOSPITAL. (General Hospital—72 Beds.) Applications invited from registered medical practitioners for following appointments:—

RESIDENT SURGICAL JUNIOR REGISTRAR (B1).
HOUSE OFFICER (A) or (B2).

Salary and conditions for both posts in accordance with the terms of service issued by the Ministry of Health. The work of the Hospital is mainly surgical and there is a busy Outpatient Department. Junior Registrar appointment for 12 months; 6 months' appointment for the House Officer post.

Application forms, which must be returned by 30th March, 1950, may be obtained from the Secretary, West Manchester Hospital Management Committee, Park Hospital, Davyhulme, near Manchester

EPSOM, SURREY. HORTON HOSPITAL. Horton Hospital Management Committee. There is a vacancy for HOUSE PHYSICIAN. Applicants must have held a house appointment in a General Hospital, but previous psychiatric experience is not essential. Single resident accommodation is available. The Hospital (1400 Beds) deals with all types of psychiatric illness, and experience may be gained in all modern physical, occupational, and psychotherapeutic methods. There is a Special Unit (The Mott Clinic) for the treatment of neurosyphilis. Facilities are afforded for attending courses of instruction in London for the D.P.M. The terms and conditions of service will be in accordance with those approved by the Ministry of Health for hospital medical staff.

Applications, with names and addresses of 2 referees, should be sent to the Physician-Superintendent.

EPSOM. WEST PARK HOSPITAL. Applications invited for following appointments:—

(*a*) REGISTRAR (psychiatry).
(*b*) JUNIOR HOSPITAL MEDICAL OFFICER.

This modern Hospital has accommodation for 2160 patients suffering from all stages of nervous and mental disorders. Opportunities exist for gaining experience in all branches of psychiatry. Salaries and conditions of service in accordance with the terms and conditions of service for hospital medical staff and subject to National Health Service superannuation regulations. Residential accommodation is available at moderate charges for single officers.

Applications, giving details of age, qualifications, and experience, with names of 3 referees, should be sent to the Physician-Superintendent within 14 days of appearance of this advertisement.

ENFIELD, MIDDLESEX. CHASE FARM HOSPITAL. (515 Beds.) ENFIELD GROUP HOSPITAL MANAGEMENT COMMITTEE. RESIDENT HOUSE PHYSICIAN (B2), second or third post, required 28th April, 1950, for general medical and pædiatric duties. 6 months' appointment. Salary and conditions as prescribed by the Ministry of Health. R practitioners holding A posts may apply.

Applications, stating age, nationality, qualifications, and experience, with names of 2 referees, to the Medical Director of the Hospital by 6th April, 1950. Canvassing disqualifies.

ENFIELD, MIDDLESEX. CHASE FARM HOSPITAL. (515 Beds.) ENFIELD GROUP HOSPITAL MANAGEMENT COMMITTEE. HOUSE OFFICER (second or third post) required for Special Departments (E.N.T., Dermatology, Ophthalmology, Orthopædics), post vacant 28th March, 1950. 6 months' appointment. Salary and conditions as prescribed by the Ministry of Health. R practitioners holding A posts may apply.

Applications, stating age, nationality, qualifications, and experience, with names of 2 referees, to the Medical Director of the Hospital by 29th March, 1950. Canvassing disqualifies.

EXETER. ROYAL DEVON AND EXETER HOSPITAL. (300 Beds—10 Resident Medical Staff employed.) EXETER AND MID-DEVON HOSPITALS MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (B2), Male or Female, Fracture Service, post vacant 15th April, 1950. Appointment for 6 months. Salary £400–£450 p.a., less deduction of £100 p.a. for full residential emoluments. National Health Service terms and conditions. Practitioners within 3 months of qualification and liable under the National Service Acts, and R practitioners now holding A posts, may apply.

Applications, with copies of 2 recent testimonials, should be forwarded immediately to the Senior Administrative Officer.

FULBOURN (Mental) HOSPITAL, Fulbourn, near Cambridge. Required, JUNIOR REGISTRAR at above Mental Hospital. Salary in accordance with terms and conditions for hospital medical staff. This Hospital has a large annual admission rate, a separate admission unit, a modern Occupational Therapy Department and 3 outpatient clinics. All forms of modern treatment are used including insulin shock therapy. Good facilities are available for working for D.P.M. due to linkage with the University and its teaching hospital.

Applications, with copies of 3 recent testimonials or names of 3 referees, to be sent to the Medical Superintendent at once.

GOSFORTH, NEWCASTLE UPON TYNE, J. W. J. SANDERSON ORTHOPÆDIC HOSPITAL. (142 Beds.) NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. Required, JUNIOR ORTHOPÆDIC REGISTRAR (B1) at above Hospital. Appointment is full-time, and may be resident or non-resident. Preference given to those holding the Diploma of F.R.C.S. Salary in accordance with the terms and conditions of service for hospital medical and dental staffs. The Hospital is for the treatment of orthopædic and surgical tuberculosis conditions in children up to the age of 16. Outpatient clinics are held in the County of Northumberland and the City of Newcastle, and the Registrar will be required to conduct some of these.

Applications, with names and addresses of 2 referees, should be sent to the Secretary of the Hospital.

GRANTHAM AND KESTEVEN GENERAL HOSPITAL. (117 Beds.) CASUALTY OFFICER (A) or (B2) required to commence duties as soon as possible. Salary £350–£450 a year, according to the number of posts held. A deduction of £100 p.a. will be made in respect of residential emoluments. Appointment for 6 months in the first instance.

Applications, stating age, qualifications, nationality, with copies of recent testimonials, should be forwarded to the Secretary, Grantham Hospital Management Committee, 101, Manthorpe-road, Grantham.

GODALMING. KING GEORGE V SANATORIUM. Godalming, MILFORD, AND LIPHOOK GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE OFFICER (A) or (B2), medical, at above Sanatorium. Salary within range of £350–£450 p.a., less £100 for emoluments. The Sanatorium has 232 Beds and all facilities for major surgery and collapse therapy.

Applications, stating age, qualifications, experience, nationality, and names of 2 referees, should be sent to the Physician-Superintendent, King George V Sanatorium, Godalming.

GRIFFITHSTOWN, MON. COUNTY HOSPITAL. (206 Beds.) Required, HOUSE OFFICER (A) or (B2), surgical. Duties are mainly surgical, but some orthopædics work is involved. Salary £350–£450 p.a. in accordance with the number of previous appointments held, less a deduction of £100 p.a. for full residential emoluments.

Apply, with names of 2 persons for reference, to—
17, Cardiff-road, Newport, Mon. T. A. JONES, Secretary.

GRIMSBY HOSPITALS MANAGEMENT COMMITTEE. Required, SURGICAL REGISTRAR (B1), resident or non-resident, for Grimsby General Hospital and Scartho Road Infirmary (71 and 34 surgical beds respectively). Post is of Registrar status, and candidates must possess a higher surgical qualification. Salary in accordance with the terms and conditions of service for hospital medical and dental staffs.

Applications, stating age, qualifications with dates, and copies of 3 testimonials, to be submitted without delay to the Administrative Officer, Grimsby General Hospital.

GRIMSBY HOSPITALS MANAGEMENT COMMITTEE. Required, HOUSE OFFICER (A), surgical, for 6 months in the first instance. Salary in accordance with terms and conditions of service of hospital medical and dental staffs—£350 p.a., less £100 p.a. for board, lodging, &c.

Applications, with copies of testimonials or names of referees, to Administrative Officer, Scartho Road Infirmary, Grimsby.

GRIMSBY GENERAL HOSPITAL. (220 Beds.) Group No. 10. GRIMSBY HOSPITALS MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE OFFICER (B2) for Orthopædic, Fracture, and Accident Service, post now vacant. Previous surgical experience an advantage, but orthopædic experience not essential. Post suitable for commencement of training in orthopædics and fractures with opportunity for operative experience. Remuneration in accordance with National Health Service terms and conditions of service of hospital medical and dental staffs. R practitioners within 3 months of qualification or holding A posts may apply, when appointment will be for 6 months.

Applications should be sent immediately to Administrative Officer, Grimsby General Hospital, Grimsby.

HALIFAX GENERAL HOSPITAL. (425 Beds.) Required, House PHYSICIAN (B2) at above Hospital, post vacant 29th April, 1950. Salary within range of £250–£350 p.a., plus full residential emoluments.

Applications, stating age, nationality, qualifications, and experience, with copies of 3 recent testimonials, to be addressed to the Secretary, Halifax Area Hospitals Management Committee, Royal Halifax Infirmary, Halifax.

HALIFAX. ROYAL HALIFAX INFIRMARY. (298 Beds—Resident Medical Staff, 7.) Required, HOUSE PHYSICIAN (B2), Male, at above Hospital. Salary within range of £400–£450 p.a., less £100 p.a., for residential emoluments.

Applications, stating age, nationality, qualifications, and experience, and enclosing copies of 3 testimonials, should be sent to the Secretary, Halifax Area Hospitals Management Committee, Royal Halifax Infirmary, Halifax.

HALIFAX AREA HOSPITALS MANAGEMENT COMMITTEE. Appointment of SENIOR MEDICAL REGISTRAR (Male). Appointment is non-resident and the duties are partly at the chronic sick hospital (386 Beds) combined with work in one of the acute hospitals (298 Beds) in Halifax where there is a busy Outpatients Department. Successful applicant will be required to undertake regular service at the chronic sick hospital which is being developed as a Geriatric Unit and is provided with full medical services. The assistance of a House Physician is provided at the chronic Hospital but the Registrar will be responsible to the Visiting Consultants who attend regularly. Applicants should have had experience in the junior posts, be of senior status, and hold a senior degree.

Applications, stating age, nationality, qualifications, and experience, and containing names and addresses of 3 persons from whom testimonials can be obtained, should be forwarded to the Secretary to the Committee, Royal Halifax Infirmary, Halifax.

HALESOWEN. ROMSLEY HILL SANATORIUM, near Halesowen, Worcs. (120 Beds.) BIRMINGHAM (SANATORIA) GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications invited for whole time post of REGISTRAR. Successful applicant will reside at above Sanatorium (accommodation for single person only), but will undertake duties at the Chest Clinic, Great Charles-street, Birmingham, 3, as required. Arrangements will also be made for experience in the Thoracic Surgical Centre of the group. Applicants should have had previous experience in the treatment of tuberculosis. Salary and conditions of service in accordance with terms and conditions of service of hospital medical and dental staffs (England and Wales)—i.e., £775 for the first year and £890 for second and subsequent years, less residential emoluments. Post subject to the National Health Service superannuation regulations.

Applications, stating age, qualifications, training, and experience, with copies of 3 recent testimonials, should be addressed to the Secretary, Birmingham (Sanatoria) Group Hospital Management Committee, Yardley Green Hospital, Birmingham, 9, not later than 14 days from publication of this advertisement.

HAVERFORDWEST. PEMBROKE COUNTY WAR MEMORIAL HOSPITAL. (200 Beds.) Required, HOUSE SURGEON (A), Male or Female. Salary £250 p.a., with full residential emoluments.

Applications in writing, stating age, qualifications with dates, and nationality, with copies of 3 testimonials, to be sent immediately, addressed to the Secretary-Superintendent, Pembroke County War Memorial Hospital, Haverfordwest.

A. W. YOUNGS, Secretary,
West Wales Hospital Management Committee.

HEREFORDSHIRE HOSPITAL MANAGEMENT COMMITTEE. COUNTY HOSPITAL. (333 Beds.) GENERAL HOSPITAL. (154 Beds.) Required, JUNIOR REGISTRAR (orthopædics). Salary £670 p.a. Conditions of service as applicable to hospital medical and dental staffs in England and Wales. Preference given to applicants who have passed the final examination of the Royal College of Surgeons. All applicants must have passed the primary examination.

Applications in writing, with names of 3 referees, to be addressed to the Secretary, Herefordshire Hospital Management Committee, Administrative Offices, County Hospital, Hereford, within 21 days after the issue of this advertisement.

HEXHAM GENERAL HOSPITAL. (310 Beds.) Hexham and DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (A) or (B2), Orthopædic Department. (130 Beds.) Post offers exceptional experience in all branches of orthopædics, department being staffed by the Senior Consultant from the teaching hospital of the University of Durham and a whole-time Consultant. Salary and conditions according to national scale—£350–£450, less £100 for emoluments.

Applications, within 14 days of this advertisement, to—
A. CURTIS, F.R.C.S., Medical Superintendent.

HEXHAM GENERAL HOSPITAL. (310 Beds.) Hexham and DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON in general surgery, post vacant shortly. Salary and conditions according to national scale—£350–£450, less £100 for emoluments.

Applications, within 14 days of this advertisement, to—
A. CURTIS, F.R.C.S., Medical Superintendent.

HEXHAM AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. HEXHAM GENERAL HOSPITAL. (310 Beds.) DILSTON HALL MATERNITY HOSPITAL. (55 Beds.) Required, HOUSE SURGEON to the Departments of Gynæcology and Obstetrics, with periods of 3 months in each Hospital. Salary and conditions according to national scale—£350–£450, less £100 for emoluments.

Applications, within 14 days of this advertisement, to—
A. CURTIS, F.R.C.S., Medical Superintendent.

HIGH WYCOMBE AND DISTRICT WAR MEMORIAL HOSPITAL. (101 Beds.) Required, RESIDENT HOUSE OFFICER (third post), surgical, vacant immediately. 2 other resident medical staff. Appointment is in accordance with the National Health Service terms and conditions of service of hospital medical and dental staffs (England and Wales). Salary £450 p.a., less £100 p.a. in respect of board, lodging, and other services provided.

Applications, with full details and copies of testimonials, to—
E. BARBER, Secretary, High Wycombe and
District Hospital Management Committee.
St. Mary's Cottage, High Wycombe.

HIGH WYCOMBE AND DISTRICT WAR MEMORIAL HOSPITAL. (101 Beds.) Applications for post of SENIOR RESIDENT OFFICER are invited from registered medical practitioners of not less than 2 years' standing with an interest in general surgery and general medicine, and who have held previous house appointments. Duties to superintend, assist, and coördinate the work of 3 other House Officers and to be responsible for the admission of all patients to the Hospital. Salary in accordance with Junior Hospital Medical Officer scale—£700–£50–£1000 p.a., less residential emoluments of £150 p.a. for the present, subject to an award of the Whitley Council. Appointment for 1 year in the first instance, and is subject to National Health Service superannuation regulations.

Applications, stating age, experience, and qualifications, with copies of 2 recent testimonials, should be sent immediately to—
E. BARBER, Secretary, High Wycombe and
District Hospital Management Committee.
St. Mary's Cottage High Wycombe.

HITCHIN, HERTS. THE LISTER HOSPITAL. (236 Beds.) Required, RESIDENT HOUSE SURGEON (A) or (B2) to commence 10th April, 1950. Salary and conditions of service in accordance with national scale. Appointment for 6 months in the first instance.

Applications, stating age, nationality, qualifications, and experience, with copies of 3 recent testimonials, should be sent immediately to the Surgeon-Superintendent, The Lister Hospital, Hitchin, Herts.

HILLINGDON HOSPITAL, near Uxbridge, Middlesex. CASUALTY OFFICER (B1), Male, resident, required at above Hospital, vacant almost immediately. Post tenable for 12 months. Whole-time duties under Medical Director will include dealing with casualties and admissions to hospital and such other duties as may be required. Applicants should have held previous house appointments. Salary in accordance with the new terms and conditions for hospital medical staff £700–£50–£1000 p.a., less a deduction for residential emoluments.

Applications by 29th March, stating age, nationality, qualifications, and experience, and enclosing copies of 1–3 recent testimonials, to the Medical Director.

HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE invite applications for post of HOUSE SURGEON (Female) to the Princess Royal Maternity Home (57 Beds). The holder of the post will have access to the abnormal maternity and gynæcological beds at the Royal Infirmary. The department is under the control of 2 Consultant Obstetricians and Gynæcologists. Salary in accordance with terms and conditions for hospital medical and dental staffs.

Applications to be addressed to—

H. J. JOHNSON, Secretary to the Management Committee.
The Royal Infirmary, Huddersfield.

HUDDERSFIELD ROYAL INFIRMARY. (321 Beds.) House PHYSICIAN (B2) required to commence duty immediately. Salary in accordance with the terms and conditions for hospital medical and dental staffs.

Applications, with copies of 3 recent testimonials, should be addressed to— H. J. JOHNSON, Secretary,
Huddersfield Hospital Management Committee.
The Royal Infirmary, Huddersfield.

HUDDERSFIELD ROYAL INFIRMARY. (321 Beds.) Junior ANÆSTHETIC REGISTRAR required to commence duties as soon as possible. Post is resident. Salary in accordance with terms and conditions of service of hospital medical and dental staffs, with full residential emoluments.

Applications, with copies of 3 recent testimonials, to be address, to— H. J. JOHNSON, Secretary.
Huddersfield Hospital Management Committee.
The Royal Infirmary, Huddersfield.

HUDDERSFIELD ROYAL INFIRMARY. (321 Beds.) Junior REGISTRAR (B1), resident, required for casualty duties. Salary in accordance with the terms and conditions of service for hospital medical and dental staffs—£670 a year, less £150 in respect of residential emoluments.

Applications, with copies of 3 recent testimonials, to be sent as soon as possible to—

H. J. JOHNSON, Secretary,
Huddersfield Hospital Management Committee.
The Royal Infirmary, Huddersfield.

HULL. VICTORIA HOSPITAL FOR SICK CHILDREN, Park-street, HULL. (143 Beds.) HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE PHYSICIAN (A) or (B2), Male or Female, 6 months' appointment. Post vacant from 1st April, 1950, and salary is in accordance with the terms of service issued by the Ministry of Health. Post counts towards qualification D.C.H.

Applications, with testimonials, stating when free, to be sent to the Administrative Officer at the above address.

HULL. VICTORIA HOSPITAL FOR SICK CHILDREN, Park-street, HULL. (143 Beds.) HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, 2 HOUSE SURGEONS (A) or (B2), Male or Female. 6 months' appointment. Posts now vacant. Salary in accordance with the terms of service issued by the Ministry of Health. Posts count towards qualification D.C.H.

Applications, with testimonials, stating when free, to be sent to the Administrative Officer at the above address.

HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. HULL ROYAL INFIRMARY. Required, OPHTHALMIC HOUSE SURGEON (B2) for duties at the Hull Royal Infirmary and the Victoria Hospital for Sick Children, vacant now. Recognised for D.O.M.S. Salary in accordance with the terms and conditions of service of hospital medical staff. Appointment for 6 months, terminable by 1 month's notice either side.

Forms of application may be obtained from, and returned as soon as possible to, the Administrative Officer, Hull Royal Infirmary.

HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. HULL ROYAL INFIRMARY. Required, HOUSE SURGEON (B2) for duties in the E.N.T. Department at the Hull Royal Infirmary and the Victoria Hospital for Sick Children, vacant March. Recognised for D.L.O. Salary in accordance with the terms and conditions of service of hospital medical staff. Appointment for 6 months, terminable by 1 month's notice on either side.

Forms of application may be obtained from, and returned as soon as possible to; the Administrative Officer, Hull Royal Infirmary.

HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. JUNIOR ANÆSTHETIC REGISTRAR (B1), non-resident, required for duties at the Hull Royal Infirmary and the Victoria Hospital for Sick Children. Appointment for 1 year and will be in accordance with the terms and conditions of service for hospital medical staff. Salary £670 p.a.

Applications should be made on forms to be obtained from R. J. CARLESS, Secretary to the Management Committee, Hull Royal Infirmary.

HULL MATERNITY HOSPITAL, Hedon-road. (74 Beds.) Required, JUNIOR HOUSE SURGEON (A) or (B2), vacant April, at above Hospital which is recognised for the M.R.C.O.G. examination. Post tenable for 6 months. Salary £350–£450 p.a., according to experience, less £100 p.a. for residential emoluments.

Application forms may be obtained from, and should be returned as soon as possible to, R. J. CARLESS, Secretary, Hull (A) Group Hospital Management Committee, Hull Royal Infirmary.

HULL ROYAL INFIRMARY. Required, Orthopædic House SURGEON (B2), post vacant April. Hospital has a modern Fracture Department (11,000 attendances annually). Salary in accordance with the terms and conditions of service of hospital medical staff. Appointment for 6 months, terminable by 1 month's notice either side.

Forms of application may be obtained from, and returned as soon as possible to, the Administrative Officer, Hull A Group Hospital Management Committee, Hull Royal Infirmary.

HULL ROYAL INFIRMARY. Hull A Group Hospital Manage-MENT COMMITTEE. Required, HOUSE SURGEON (B2) at the Sutton Branch Hospital. Appointment tenable for 6 months. Salary and conditions of service in accordance with the Ministry of Health scale for House Officers.

Application forms obtainable from, and returnable as soon as possible to, the Administrative Officer, Hull Royal Infirmary.

ILFORD. KING GEORGE HOSPITAL. Required, House Surgeon, 8th April, 1950. Post tenable for 6 months. Salary £350 p.a. minimum and £450 p.a. maximum, according to experience and qualifications, less emoluments.

Applications, giving full particulars and accompanied by testimonials should be sent by 1st April, 1950, to—

G. AUSTIN HEPWORTH, Secretary, Ilford and
Barking Group Hospital Management Committee.
King George Hospital, Ilford.

IPSWICH. EAST SUFFOLK AND IPSWICH HOSPITAL. (360 Beds.)

HOUSE SURGEON (A) or (B2) to General Surgeon required immediately.

HOUSE SURGEON (A) or (B2) to Orthopædic and Fracture Department required immediately.

HOUSE PHYSICIAN (B2) required 20th April.

Salary and conditions in accordance with national scale.

Applications, with full particulars, to JOHN WILLIAMS, Secretary, Ipswich Group Hospital Management Committee at East Suffolk and Ipswich Hospital.

IPSWICH BOROUGH GENERAL HOSPITAL. (300 Beds.) HOUSE SURGEON (A) or (B2) to Gynæcological and Obstetrical Department required 25th April. Salary and conditions in accordance with national scale.

Applications, with full particulars to JOHN WILLIAMS, Secretary, Ipswich Group Hospital Management Committee at East Suffolk and Ipswich Hospital, Ipswich.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. House Officer (A) or (B2), resident, required for duty in Specials Unit, comprising E.N.T., eyes, plastic, skin, and some dentistry. Salary, terms, and conditions in accordance with approved scales for hospital medical staff.

Applications (endorsed "House Officer, Specials Unit, W.M.H.") stating age, nationality, qualifications, and experience, with copies of up to 3 recent testimonials, to the Secretary, South West Middlesex Hospital Management Committee, 1, Churchfield-road, Ealing, W.13. Closing date 4th April, 1950.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. Junior Registrar (B1), whole-time, Department of Psychiatry. Department includes neurosis centre and has extensive outpatient service. Salary, terms, and conditions of service as approved for hospital medical staff. Resident post.

Applications (endorsed "Junior Registrar, Psychiatry, W.M.H."), stating age, nationality, qualifications, and experience, with copies of up to 3 recent testimonials, to the Secretary, South West Middlesex Hospital Management Committee, 1, Churchfield-road, Ealing, W.13. Closing date 8th April, 1950.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. House Officer (A) or (B2), resident, Pædiatric Unit. Salary, terms, and conditions in accordance with approved scales for hospital medical staff.

Applications (endorsed "House Officer, Pædiatric Unit, W.M.H."), stating age, nationality, qualifications, and experience, with copies of up to 3 recent testimonials, to the Secretary, South West Middlesex Hospital Management Committee, 1, Churchfield-road, Ealing, W.13, by 4th April, 1950.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. House Officer (A) or (B2), resident, general surgery. Salary, terms, and conditions of service as approved for hospital medical staff.

Applications (endorsed "House Officer, General Surgery, W.M.H."), stating age, nationality, qualifications, and experience, with copies of up to 3 recent testimonials, to the Secretary, South West Middlesex Hospital Management Committee, 1, Churchfield-road, Ealing, W.13. Closing date 3rd April, 1950.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. Senior Registrar (B1) required in Department of Geriatrics. Salary, terms, and conditions as approved for hospital medical staff. Appointment normally for 3 years. Applicants must be highly qualified Men or Women with good experience in general medicine and a genuine interest in geriatrics. Duties will include work with inpatients and outpatients. Post offers excellent clinical experience and wide scope for initiative, development, and research.

Applications (endorsed "Senior Registrar, W.M.H."), stating age, nationality, qualifications, and experience, with copies of up to 3 recent testimonials to the Secretary, South West Middlesex Hospital Management Committee, 1, Churchfield-road, Ealing, W.13. Closing date 8th April, 1950.

KINGSTON HOSPITAL, Wolverton-avenue, Kingston-on-Thames. (600 Beds.) KINGSTON GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications invited from suitably qualified and experienced medical practitioners for position of HOUSE OFFICER (B2), General surgery, resident. Salary and terms and conditions of service in accordance with the National Health Service terms and conditions of service of hospital medical and dental staffs.

Applications by letter, stating age, qualifications, and experience, with copies of 1–3 recent testimonials or names of 3 referees, should reach the Physician-Superintendent of the Hospital by 5th April, 1950.

ILKLEY. THE HOSPITAL, MIDDLETON-IN-WHARFEDALE, near ILKLEY. (510 Beds.) Required, HOUSE OFFICER at the above Hospital for tuberculosis. Tenable for 6 months. Salary within range of £350–£450 p.a., less £100 p.a. residential emoluments.

Applications to the Secretary.

KETTERING AND DISTRICT GENERAL HOSPITAL. Required, HOUSE SURGEON (B2). Salary from £400–£500 p.a., according to experience. Appointment in the first instance for 6 months, to commence immediately. R practitioners within 3 months of qualification and liable under the National Service Acts may apply.

Applications, stating age, qualifications, &c., with copies of 1–3 testimonials, should be sent to the Assistant Secretary, at the General Hospital.

G. W. JACKSON, Secretary, Kettering and District Hospital Management Committee.

KETTERING AND DISTRICT GENERAL HOSPITAL. Required, HOUSE SURGEON in Casualty and Traumatic Surgery Departments. Salary according to scale. Appointment in the first instance for 6 months. R practitioners within 3 months of qualification and liable under the National Service Acts may apply.

Applications, stating age, qualifications, &c., with copies of 1–3 testimonials, should be sent as soon as possible to—

G. H. FENNELL, Assistant Secretary.

KETTERING GENERAL HOSPITAL. (125 Beds.) Required, Junior SURGICAL REGISTRAR (B1), resident. Salary in accordance with Ministry of Health terms and conditions of service. Appointment tenable for 1 year in the first instance.

Applications, with copies of 3 recent testimonials, to be sent to the Assistant Secretary, Kettering General Hospital, immediately. G. W. JACKSON, Secretary,

Kettering and District Hospital Management Committee.

KETTERING GENERAL HOSPITAL. (125 Beds.) Required, JUNIOR REGISTRAR ANÆSTHETIST (B1), resident. Salary in accordance with Ministry of Health terms and conditions of service. Appointment tenable for 1 year in the first instance. Hospital is recognised for training for the D.A.

Applications, with copies of 3 recent testimonials, to be sent to the Assistant Secretary, Kettering General Hospital, immediately. G. W. JACKSON, Secretary,

Kettering and District Hospital Management Committee.

KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL, KIDDERMINSTER. (124 Beds.) MID-WORCESTERSHIRE HOSPITAL MANAGEMENT COMMITTEE. Required, CASUALTY OFFICER (A), post now vacant. Salary £350 p.a., less £100 for residential emoluments. R practitioners within 3 months of qualification may apply, when appointment will be limited to 6 months.

Applications, with copies of recent testimonials, should be sent at once to the Administrative Officer of the Hospital.

LINCOLN COUNTY HOSPITAL. (200 Beds.) Required, House SURGEON (A) or (B2). Salary £350–£450 p.a., less £100 residential emoluments. R practitioners within 3 months of qualification may apply.

Applications, stating age, qualifications, and experience, with copies of 3 recent testimonials, should be forwarded as soon as possible to—

R. W. HOWICK, Secretary,
Lincoln No. 1 Hospital Management Committee.

LINCOLN NO. 1 HOSPITAL MANAGEMENT COMMITTEE. Required, CHEST REGISTRAR (B1). Duties will involve working with the Lincolnshire Mass Radiography Unit, the taking of clinics, and occasionally relieving in the sanatoria. Previous experience of diseases of the chest is essential. Salary £775 p.a., non-resident. Suitably qualified R practitioners holding B2 appointments, also those holding B1 posts and ineligible for H.M. Forces, are invited to apply.

Applications, stating age, qualifications, and experience, with copies of 3 recent testimonials, should be forwarded as soon as possible to R. W. HOWICK, Secretary.

County Hospital, Lincoln.

LANCASTER. ROYAL ALBERT HOSPITAL. The Royal Albert HOSPITAL MANAGEMENT COMMITTEE invites applications for appointment of Whole-time RESIDENT MEDICAL OFFICER (Registrar or Junior Registrar) at above Hospital for the treatment and training of mental defectives of both sexes and of all ages and grades. Hospital offers excellent facilities for training for the D.P.M. Salary £775–£115–£890 p.a. for Registrar or £670 p.a. for Junior Registrar. Appointment subject to provisions of National Health Service superannuation regulations and will be in accordance with the agreed terms and conditions of service of hospital medical and dental staffs under the National Health Service.

Applications should be forwarded to the Medical Superintendent as soon as possible.

LANCASTER. ROYAL LANCASTER INFIRMARY. (230 Beds.) Required, NON-RESIDENT JUNIOR REGISTRAR (B1), anæsthetics, post is full-time and vacant now. Salary, &c., in accordance with the Ministry of Health terms and conditions of service for hospital medical and dental staffs.

Applications, stating age, nationality, qualifications, and experience, with 3 recent references, should be forwarded immediately to the Secretary of the Lancaster and Kendal Hospital Management Committee, Royal Lancaster Infirmary, Lancaster.

LANCASTER. ROYAL LANCASTER INFIRMARY. (230 Beds.) Required, HOUSE PHYSICIAN (A), resident, post is full-time, vacant from 20th March, 1950, and is for 6 months. Salary, &c., in accordance with the Ministry of Health terms and conditions of service for hospital medical and dental staffs.

Applications, stating age, nationality, qualifications, and experience, with 3 recent references, should be forwarded immediately to the Secretary of the Lancaster and Kendal Hospital Management Committee, Royal Lancaster Infirmary, Lancaster.

LANCASTER. ROYAL LANCASTER INFIRMARY. (230 Beds.) Required, RESIDENT HOUSE SURGEON (B2), orthopædic. Post recognised for the F.R.C.S. examinations and will include some casualty work. Post is full-time, vacant from 25th March, and is for 6 months. Salary, &c., in accordance with the Ministry of Health terms and conditions of service for hospital medical and dental staffs.

Applications, stating age, nationality, qualifications, and experience, with 3 recent references, should be forwarded immediately to the Secretary of the Lancaster and Kendal Hospital Management Committee, Royal Lancaster Infirmary, Lancaster.

LANCASTER. ROYAL LANCASTER INFIRMARY. (230 Beds.) Required, RESIDENT HOUSE SURGEON (A), post is full-time, vacant from 20th March, and is for 6 months. Salary, &c., in accordance with the Ministry of Health terms and conditions of service for hospital medical and dental staffs.

Applications, stating age, nationality, qualifications, and experience, with 3 recent references, should be forwarded immediately to the Secretary of the Lancaster and Kendal Hospital Management Committee, Royal Lancaster Infirmary, Lancaster.

LEAMINGTON SPA. WARNEFORD GENERAL HOSPITAL. (207 Beds.) Required, OBSTETRIC ASSISTANT (B2), House Surgeon, post vacant 24th April, 1950. Salary £300 or £350 p.a., according to previous number of appointments held, plus full residential emoluments. Post recognised for D.Obst. R.C.O.G. examination. R practitioners holding A posts may apply, when appointment will be limited to 6 months.

Applications to be sent to—

Miss V. WELLS, Assistant Secretary,
South Warwickshire Hospital Group (No. 14).

LEAMINGTON SPA. WARNEFORD GENERAL HOSPITAL. (207 Beds.) Required, RESIDENT HOUSE SURGEON (A) for a 6-month appointment from 4th May, 1950. Salary £350 p.a., less £100 p.a. for residential emoluments. R practitioners within 3 months of qualification may apply.

Applications to be sent to—

Warneford Hospital. Miss V. WELLS, Assistant Secretary.

LIVERPOOL AND DISTRICT EASTERN HOSPITAL MANAGE-MENT COMMITTEE invite applications from suitably qualified medical practitioners for post of SENIOR REGISTRAR (B1) for duties in connection with the services for the treatment of chest diseases and pulmonary tuberculosis to be provided in the East Liverpool Area (population approximately 250,000). The Medical Officers in this District Service will work in close association with the Regional Chest Unit at Broadgreen Hospital, and will also be in charge of tuberculosis beds at Newsham General Hospital (96). Salary in accordance with the Ministry's scale—i.e., £1000–£100–£1300 p.a.

Applications, to be made on forms obtainable from undersigned, should give full details of qualifications, previous experience, and names and addresses of 2 referees and should be returned by 4th April, 1950. H. BLYTHE, Secretary.

Broadgreen Hospital, Edge Lane-drive, Liverpool, 14,
March, 1950. (2240.)

LIVERPOOL, 15. SEFTON GENERAL HOSPITAL. (997 Beds— 123 Cots.) Required, ORTHOPÆDIC HOUSE SURGEON (A) or (B2) for above-named Hospital. Appointment is for 6 months and is open to practitioners within 3 months of qualification and liable under the National Service Acts. Terms and conditions of service in accordance with the Regulations of the Ministry of Health, the salary being at rate of £350 p.a. for first post held, £400 p.a. for second post held, and £450 p.a. for third and any subsequent post held. A deduction at rate of £100 p.a. will be made in respect of board and lodging and other services provided.

Applications, stating age, qualifications with dates, and details of experience, should be sent to undersigned to be received by 11th April, 1950.

GARNET CHAPLIN, Secretary to the
South Liverpool Hospital Management Committee.
Sefton General Hospital, Liverpool, 15. (2249.)

LEEDS. GATEFORTH HOSPITAL (Tuberculosis). Required, HOUSE OFFICER (A) or (B2). The Hospital provides 100 Beds for the treatment of tuberculosis in men. The work is closely linked with Killingbeck Hospital, Leeds (227 Beds), and the Regional Thoracic Surgery scheme. Salary according to national scale.

Applications should be made as soon as possible to undersigned, from whom form of application and further particulars may be obtained. S. C. EDWARDS, Secretary.

Administrative Offices, Leeds Group B Hospital Management Committee No. 22, Seacroft Hospital, Leeds.

LEEDS. MEANWOOD PARK HOSPITAL (Mental Defectives). Applications invited from registered medical practitioners for following appointments at this Hospital for mental defectives of all ages and grades. Salary according to national scale. There is residential accommodation (unmarried quarters).

(i) SENIOR REGISTRAR (Deputy Medical Superintendent).
(ii) JUNIOR HOSPITAL MEDICAL OFFICER.

Applications should be made as soon as possible to undersigned, from whom form of application and further particulars may be obtained.

S. C. EDWARDS, Secretary, Leeds,
Group B Hospital Management Committee, No. 22.
Administrative Offices, Seacroft Hospital, Leeds.

LEEDS. THE UNITED LEEDS HOSPITALS. The General INFIRMARY AT LEEDS. Required, SENIOR RESIDENT ANÆSTHETIST (B1) at above Infirmary. Post graded as of Junior Registrar status. Candidates holding B1 posts who are ineligible for H.M. Forces may apply. The post can be non-resident if desired.

Applications, stating age, nationality, full details of experience, and with names of 3 referees, should be sent to undersigned by 3rd April, 1950. S. CLAYTON FRYERS,

Secretary to the Board of Governors.

LEEDS. THE UNITED LEEDS HOSPITALS AND THE UNIVERSITY OF LEEDS. Required, REGISTRAR (B1) in the Department of Oto-rhino-laryngology. Grading of post will be that of Junior Registrar or Registrar having regard to the qualifications and experience of applicant. Duties will include some teaching but will be mainly clinical, and will afford an excellent opportunity of obtaining good surgical experience in the specialty. Candidates holding B1 posts who are ineligible for H.M. Forces may apply.

Applications, stating age, nationality, full details of experience, with names of 3 referees, should be sent by 3rd April, 1950, to—

S. CLAYTON FRYERS, Secretary to the Board of Governors.
United Leeds Hospitals.

LEEDS A GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications invited from registered medical practitioners (Male and Female) for following House Officer appointments, vacant 1st May, 1950.

St James's Hospital
7 HOUSE PHYSICIANS (A).
HOUSE PHYSICIAN (A), pædiatrics.
2 HOUSE SURGEONS (A).
HOUSE SURGEON (A), Plastic Unit.
*HOUSE SURGEON (B2).
†OBSTETRIC HOUSE SURGEON (B2).
†GYNÆCOLOGICAL HOUSE SURGEON (B2).
ORTHOPÆDIC HOUSE SURGEON (B2).
JUNIOR ANÆSTHETIC OFFICER (B2).
HOUSE PHYSICIAN (B2), Psychiatric Unit.

St. Mary's Hospital
‡2 OBSTETRIC HOUSE SURGEONS (B2).

Public Dispensary and Hospital
JUNIOR CASUALTY OFFICER (B2).
JUNIOR CASUALTY OFFICER (B2), with medical duties.
E.N.T. AND OPHTHALMIC HOUSE SURGEON (B2).

* Recognised by the Royal College of Surgeons for Fellowship.
† Recognised by the Royal College of Obstetricians and Gynæcologists for Membership.
‡ Recognised by the Royal College of Obstetricians and Gynæcologists for Diploma.

A appointments 6 months. R practitioners within 3 months of qualification may apply. B2 appointments 6 months. R practitioners holding A posts may apply. Salaries and conditions of service in accordance with the terms of service issued by the Ministry of Health—namely, £350 p.a. for first post held, £400 p.a. for second post, and £450 p.a. for third and subsequent posts, with a deduction at rate of £100 p.a. in respect of board, lodging, and other services provided.

Applications, stating age, qualifications, and experience, with copies of 3 recent testimonials, should be forwarded to the Administrative Medical Officer, St. James's Hospital, Leeds, 9, as soon as possible.

J. FOLKARD, Secretary to the Committee.

MAIDSTONE. KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL. (113 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE (GROUP 13). Required, HOUSE SURGEON (B2) in the E.N.T. Department of above Hospital, post vacant April. Candidates should have had some experience in the specialty. The Hospital is recognised by the examining Board for the D.L.O. 6 months' appointment. Salary in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales) £350, £400, or £450 a year, according to previous experience. A deduction at rate of £100 a year is made in respect of board and lodging and other services provided. R practitioners holding A posts may apply.

Applications, stating age, qualifications, and experience, with copies of 3 recent testimonials, to be forwarded as soon as possible to the Secretary at the Hospital.

MANCHESTER. BOOTH HALL CHILDREN'S HOSPITAL. (525 Beds.) MANCHESTER BABIES' AND CHILDREN'S HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (A), post vacant 6th May, 1950. Salary according to new terms for hospital medical staff. £100 p.a. is deducted for board and lodging.

Applications, stating age, qualifications with dates, and nationality, with 3 testimonials, to be sent to the Pædiatrician-Superintendent, Charlestown-road, Manchester, 9, by 6th April, 1950.

MANCHESTER, 20. CHRISTIE HOSPITAL AND HOLT RADIUM INSTITUTE. Required, HOUSE OFFICER (B2), surgical. Ministry of Health salary and conditions.

Applications, stating age, qualifications, and experience, with names of 2 referees, to be forwarded immediately to—

A. H. KEATES, Secretary,
South Manchester Hospital Management Committee.
Christie Hospital and Holt Radium Institute, Manchester, 20.

MANCHESTER EAR HOSPITAL, Manchester, 15. South MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE OFFICER (A) or (B2). Ministry of Health salary and conditions.

Applications, stating age, qualifications, and experience, with names of 2 referees, to be forwarded to the Secretary of the Hospital as soon as possible.

MANCHESTER, 20. WITHINGTON HOSPITAL. (1479 Beds.) Required, Whole-time NON-RESIDENT SENIOR REGISTRAR IN PATHOLOGY. Candidates must have been qualified at least 4 years and have had at least 2 years' clinical laboratory experience, and bacteriological or biochemical experience would be an advantage. A higher qualification is desirable. Tenure of post 3 years. Salary in accordance with scale for Senior Registrar—i.e., £1000–£100–£1300 p.a. Ministry of Health conditions of service.

Applications, stating age, experience, and qualifications, and names of 2 referees, to be forwarded by 10th April, 1950, to—

A. H. KEATES, Secretary,
South Manchester Hospital Management Committee.
Christie Hospital and Holt Radium Institute, Manchester, 20.

MANCHESTER. NORTH MANCHESTER HOSPITAL MANAGEMENT COMMITTEE invite applications from suitably qualified registered medical practitioners for following appointments at the hospitals indicated :—

(1) Crumpsall Hospital (General—1150 Beds)
JUNIOR REGISTRAR (B1), neurosurgical.

(2) Manchester Victoria Memorial Jewish Hospital (General—102 Beds)
JUNIOR REGISTRAR/REGISTRAR (B1), medical. The grade attached to this position is Junior Registrar/Registrar, according to qualifications, experience, and training.

Appointments in accordance with terms and conditions of service of hospital medical and dental staffs, and subject also to National Health Service superannuation regulations.

Applications, indicating appointment applied for, and stating age, nationality, qualifications with dates, details of experience with dates, with names and addresses of 2 referees, to be sent as soon as possible to—

A. T. SAMPSON, Secretary to the Committee.
Crumpsall Hospital, Manchester, 8.

MANCHESTER REGIONAL HOSPITAL BOARD. Thoracic SURGERY UNIT, BAGULEY SANATORIUM, AND BAGULEY ANNEXE, &c. Applications invited from registered medical practitioners for appointment of SENIOR REGISTRAR in Thoracic Surgery Units in the Manchester Region. Successful candidate will be required to work at Baguley Sanatorium, Baguley Annexe, and at other hospitals in the Region. Post is whole-time non-resident, and appointment will be made, in the first instance, for 3 years at a salary of £1000–£100–£1300 p.a. Candidates must have been qualified at least 4 years. Previous experience of thoracic surgery and a higher surgical qualification is essential.

Applications, stating age, qualifications, training, and experience, with names of 3 referees, should be forwarded to the Senior Administrative Medical Officer, No. 1 North Parade, Parsonage-gardens, Manchester, to be received by 12th April, 1950. Canvassing will disqualify.

J. GIBBON, Secretary of the Board.

MANCHESTER, 19. THE DUCHESS OF YORK HOSPITAL FOR BABIES. (101 Cots.) MANCHESTER BABIES' AND CHILDREN'S HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE PHYSICIAN (A), Male or Female, for 6 months from 15th May. Salaries in accordance with terms and conditions of service recently published.

Applications, with copies of 3 testimonials, to be sent as soon as possible to the Administrative Officer of the Hospital.

MANCHESTER. UNITED MANCHESTER HOSPITALS. MANCHESTER ROYAL INFIRMARY. The Board of Governors invite applications for whole-time non-resident training post in medicine of SENIOR REGISTRAR or REGISTRAR to the Medical Professorial Unit, vacant shortly. Appointment for 12 months, renewable, the grading and salary being those of Senior Registrar or Registrar according to qualifications and experience. Applicants must have held hospital appointments and possess a higher qualification. Practitioners holding B1 posts cannot be considered unless they are ineligible for H.M. Forces.

Applications, with names of 3 referees, should be sent to undersigned by 6th April, 1950.

By order,
F. J. CABLE, Secretary, Board of Governors,
United Manchester Hospitals.
Manchester Royal Infirmary, Manchester, 13, 13th March, 1950.

MANCHESTER. UNITED MANCHESTER HOSPITALS. MANCHESTER ROYAL INFIRMARY. The Board of Governors invite applications for whole-time post of RESIDENT SURGICAL OFFICER (Registrar or Junior Registrar), vacant at present. Applicants must have held house appointments and have had surgical experience. Preference given to candidates with higher qualifications. Appointment is for 12 months, renewable, the grading and salary being those of Registrar or Junior Registrar according to qualifications and experience. Applications from practitioners holding B1 posts cannot be considered unless they are ineligible for H.M. Forces.

Applications, with names of 3 referees, should be sent to undersigned by 6th April, 1950.

By order,
F. J. CABLE, Secretary to the Board of Governors,
United Manchester Hospitals.
Manchester Royal Infirmary, Manchester, 13,
14th March, 1950.

MANSFIELD AND DISTRICT GENERAL HOSPITAL. Mansfield HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (A) or (B2). 6 months' appointment. Salary £350–£450 p.a., according to experience, less residential emoluments, in accordance with terms of service issued by Ministry of Health.

Applications, stating age, qualifications, and copies of 2 recent testimonials, should be forwarded as soon as possible to—

A. ASHWORTH, Secretary.
"Oak Bank," Crow Hill-drive, Mansfield, Notts.

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. (All Saints' Hospital, Chatham; St. Bartholomew's Hospital, Rochester; Gravesend and North Kent Hospital; Sheppey General Hospital, Minster.) Applications invited from suitably qualified medical practitioners for appointment as SENIOR REGISTRAR IN GENERAL MEDICINE, for duty at above Hospitals in the group. Candidates should possess a higher qualification in medicine and satisfy the criteria for such appointments, as laid down in the terms and conditions of service of hospital medical and dental staffs (England and Wales). Salary within scale £1000–£1300 p.a.

Applications, giving particulars of age, qualifications and experience, with relevant dates, with names of 3 referees, should be sent to the Secretary, Medway and Gravesend Hospital Management Committee, St. William's Hospital, Rochester, Kent, by 8th April, 1950.

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. (All Saints' Hospital, Chatham; St. Bartholomew's Hospital, Rochester; Gravesend and North Kent Hospital; Sheppey General Hospital, Minster.) Applications invited from suitably qualified medical practitioners for appointment as SENIOR REGISTRAR IN ANÆSTHETICS for duty at above Hospitals in the group. Candidates should satisfy the criteria for such appointments, as laid down in the terms and conditions of service of hospital medical and dental staffs (England and Wales) and preference given to those holding the D.A. Salary within scale £1000–£1300 p.a.

Applications, giving particulars of age, qualifications and experience, with relevant dates, with names of 3 refcrees, should be sent to the Secretary, Medway and Gravesend Hospital Management Committee, St. William's Hospital, Rochester, Kent, by 8th April, 1950.

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. (All Saints' Hospital, Chatham; St. Bartholomew's Hospital, Rochester; Gravesend and North Kent Hospital; Sheppey General Hospital, Minster.) Applications invited from suitably qualified medical practitioners for appointments as REGISTRAR IN ORTHOPÆDICS for duty at above Hospitals in the group. Appointments will normally be for two years with salary of £775 a year for first year and £890 a year for second year.

Applications, giving particulars of age, qualifications and experience with relevant dates, with names of 3 referees, should be sent to the Secretary, Medway and Gravesend Hospital Management Committee, St. William's Hospital, Rochester, Kent, by 8th April, 1950.

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. (All Saints' Hospital, Chatham; Gravesend and North Kent Hospital; Sheppey General Hospital, Minster.) Applications invited from suitably qualified medical practitioners for appointment as REGISTRAR IN OBSTETRICS AND GYNÆCOLOGY, for duty at above Hospitals in the group. Appointment will normally be for 2 years with salary of £775 a year for first year and £890 a year for second year.

Applications, giving particulars of age, qualifications and experience with relevant dates, with names of 3 referees, should be sent to the Secretary, Medway and Gravesend Hospital Management Committee, St. William's Hospital, Rochester, Kent, by 8th April, 1950.

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. (All Saints' Hospital, Chatham; St. Bartholomew's Hospital, Rochester; Gravesend and North Kent Hospital; Sheppey General Hospital, Minster.) Applications invited from suitably qualified medical practitioners for 2 appointments as SENIOR REGISTRARS IN GENERAL SURGERY, for duty at above Hospitals in the group. Candidates should possess a higher qualification in surgery and satisfy the criteria for such appointments, as laid down in the terms and conditions of service of hospital medical and dental staffs (England and Wales). Salary within scale £1000–£1300 p.a.

Applications, giving particulars of age, qualifications and experience with relevant dates, with names of 3 referees, should be sent to the Secretary, Medway and Gravesend Hospital Management Committee, St. William's Hospital, Rochester, Kent, by 8th April, 1950.

MICKLEOVER, DERBY. THE PASTURES HOSPITAL. (For Nervous and Mental Disorders.) DERBY NO. 3 HOSPITAL MANAGEMENT COMMITTEE. Applications invited for appointment of:—

(1) JUNIOR REGISTRAR (B1). Salary £670 p.a. Married quarters available. A small house may be available later.
(2) HOUSE OFFICER (A) or (B2). Salary £400 p.a., with £100 p.a. deduction for residential amenities.

Previous psychiatric experience not essential. Good opportunity for experience in all forms of inpatient and outpatient treatments. Extensive outpatient clinics. Hospital not far from general and other special hospitals. Facilities for obtaining D.P.M. given.

Apply, giving usual details, to the Medical Superintendent as soon as possible.

NOTTINGHAM AND MIDLAND EYE INFIRMARY. Required, HOUSE SURGEON (B1). Salary and conditions of service in accordance with the published conditions of the Ministry of Health. Post recognised for the D.O.M.S. examination.

Applications, stating age, qualifications, and experience, with copies of testimonials, to be sent as soon as possible, to—

HENRY M. STANLEY, Secretary,
Nottingham, No. 1 Hospital Management Committee.
General Hospital, Nottingham.

NOTTINGHAM CITY HOSPITAL. (856 Beds.) Nottingham NO. 2 HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE PHYSICIAN (A) or (B2). Duties to commence approximately 10th April. Appointment for 6 months. Salary within scale £350–£450 p.a., less £100 p.a. for board and lodging.

Applications, stating age, nationality, qualifications, and experience, with copies of 1–3 testimonials, to be sent immediately to the Administrative Officer, City Hospital, Hucknall-road, Nottingham.

NOTTINGHAM. THE HOGARTH RADIOTHERAPEUTIC CENTRE AT THE NOTTINGHAM GENERAL HOSPITAL. Required, JUNIOR REGISTRAR. Salary and conditions of service in accordance with the terms issued by the Ministry of Health. Appointment for 6 months in the first instance. The position is one which would appeal to medical practitioners wishing to specialise in radiotherapy, and will include full opportunities for acquiring the necessary clinical experience for the Diploma of Radiotherapy. Applications from practitioners holding B1 posts cannot be considered unless they are ineligible for H.M. Forces.

Applications, with copies of 1–3 recent testimonials, to be sent as soon as possible to—

HENRY M. STANLEY, Secretary,
Nottingham No. 1 Hospital Management Committee.

NOTTINGHAM GENERAL HOSPITAL. Required, Radio-LOGICAL REGISTRAR (Diagnostic), non-resident. Candidates must possess a Diploma in Radiology, and have some previous experience. Duties of this post entail routine visits to all hospitals in the Nottingham Area. Salary in accordance with the Ministry scale. Duties to commence as soon as possible.

Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, to be sent as soon as possible to— HENRY M. STANLEY, Secretary,
Nottingham No. 1 Hospital Management Committee.

NOTTINGHAM GENERAL HOSPITAL. Ear, Nose and Throat DEPARTMENT. Required, AURAL HOUSE SURGEON (A), Male or Female. Duties to commence as soon as possible. Salary and conditions of service in accordance with the published conditions of the Ministry of Health. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when the appointment will be for 6 months.

Applications, stating age, qualifications, and experience, with copies of testimonials, to be sent to—

HENRY M. STANLEY, Secretary,
Nottingham No. 1 Hospital Management Committee.

NELSON, LANCS. REEDYFORD MEMORIAL HOSPITAL. (64 Beds.) Applications invited for the mainly medical post of RESIDENT MEDICAL OFFICER (A) from Male or Female registered practitioners. Post now vacant and appointment limited to 6 months. Salary £350 p.a., less £100 p.a. for full residential emoluments. A modern self-contained flat in the hospital grounds is available.

Applications, stating full particulars, with names and addresses of 2 referees, should be sent forthwith to—

J. E. WHEATCROFT, Secretary, Burnley and District Hospital Management Committee.
Victoria Hospital, Burnley.

NEWARK DISTRICT HOSPITAL, London-road, Newark, Required, RESIDENT MEDICAL OFFICER (Male or Female) to commence duties immediately, for 6 months in the first instance. Salary payable £450 p.a., less a deduction of £100 p.a. in respect of board and lodging and other services provided. The variety of work available offers an excellent opportunity to obtain sound experience, as the work involves medical and surgical duties, and includes Outpatient and Casualty Clinics.

Applications, with copy references, should be sent to the Assistant Secretary as soon as possible.

NEWCASTLE GENERAL HOSPITAL, 418, Westgate-road, New-CASTLE UPON TYNE, 4. NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE PHYSICIAN (B2), to the Children's Department. This department is actively associated with and shares staff with the department of Child Health of Durham University, and the post offers exceptional opportunities for gaining experience in many aspects of pædiatrics. Post tenable for 6 months. Salary according to the terms and conditions of the National Health Service scale.

Applications, with 1 copy of 2 testimonials, to be sent to the Medical Superintendent, Newcastle General Hospital, 418, Westgate-road, Newcastle upon Tyne, 4.

NEWCASTLE GENERAL HOSPITAL. Newcastle upon Tyne HOSPITAL MANAGEMENT COMMITTEE. Required JUNIOR REGISTRAR to the Professorial Psychiatric Unit in above Hospital. The unit is under the clinical direction of the Department of Psychological Medicine, Kings College Medical School, University of Durham. Salary according to the terms and conditions of service issued by the Ministry of Health. Appointment for 1 year in the first instance. Practitioners eligible for military service cannot be considered.

Applications, with names and addresses of 2 referees, should be sent to the Medical Superintendent, Newcastle General Hospital, 418, Westgate-road, Newcastle upon Tyne, 4, as soon as possible.

NEWCASTLE GENERAL HOSPITAL. Newcastle upon Tyne HOSPITAL MANAGEMENT COMMITTEE. Required, Whole-time NON-RESIDENT REGISTRAR to the Children's Department in above Hospital. Salary in accordance with the terms and conditions of service for hospital medical staff. This department is actively associated with and shares staff with the Department of Child Health of Durham University, and post offers exceptional opportunities for gaining experience in many aspects of pædiatrics. Appointment for 1 year in the first instance, and renewable. Practitioners eligible for military service cannot be considered.

Applications, with 1 copy of 2 testimonials, to be sent to the Medical Superintendent, Newcastle General Hospital, 418, Westgate-road, Newcastle on Tyne, 4.

NEWCASTLE UPON TYNE. HOSPITAL FOR SICK CHILDREN, Great North-road, NEWCASTLE UPON TYNE, 2. (92 Beds.) Required, RESIDENT SENIOR REGISTRAR (B1). Appointment subject to the terms and conditions of service laid down by the Ministry of Health. Commencing salary £1000 p.a. Duties include supervision of the welfare of all inpatients, medical and surgical, supervision of the 2 Junior Residents, responsibility for emergency admissions and responsibility for records.

Applications, stating age, qualifications, and experience, with 2 recent testimonials, should be sent to the Secretary, Newcastle upon Tyne Hospital Management Committee, Newcastle General Hospital, Westgate-road, Newcastle upon Tyne, 4.

NEWCASTLE UPON TYNE, 6. WALKER GATE HOSPITAL. Required, RESIDENT HOUSE OFFICER (B2) for duties concerned with pædiatric and fever cases, together with routine work in an acute E.N.T. Ward. It will be desirable that candidates should have experience in the above departments. Salary in accordance with National Health Service terms and conditions of service of hospital medical and dental staffs.

Applications should be sent to the Medical Superintendent.

K. C. BOOKER, Secretary,
Newcastle upon Tyne Hospital Management Committee.

NEWCASTLE UPON TYNE, 6. WALKER GATE HOSPITAL. NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE OFFICER (A) or (B2) whose main duty will be concerned with the tuberculosis side of this Hospital. Salary £350–£450 p.a., according to experience, less £100 for residential emoluments.

Applications, giving age, experience, qualifications, and nationality, with copies of 3 testimonials, to be sent to the Medical Superintendent as soon as possible.

NEWCASTLE UPON TYNE. THE UNITED NEWCASTLE UPON TYNE HOSPITALS. ROYAL VICTORIA INFIRMARY. Applications invited from registered medical practitioners for whole-time appointment of REGISTRAR in the Department of Radiotherapy. This is the teaching hospital of the University of Durham and successful candidate, who will work under the direction of the Head of the department, will be expected to undertake some teaching in his subject. Possession of D.M.R. or D.M.R.T. is an advantage but not essential for this appointment. This appointment, which is non-resident, will be for 1 year in the first instance subject to the Ministry of Health terms and conditions of service for hospital medical and dental staffs, and will be in the grade of Registrar at a salary of £775 or £890 p.a. according to the qualifications and experience of successful candidate.

Applications, giving age, nationality, experience, and qualifications, with names and addresses of 3 referees, should be sent by 8th April, 1950, to—

A. W. SANDERSON, House Governor and Secretary.
Royal Victoria Infirmary, Newcastle upon Tyne.

NEWCASTLE UPON TYNE. THE UNITED NEWCASTLE UPON TYNE HOSPITALS. ROYAL VICTORIA INFIRMARY. Applications invited for appointment of REGISTRAR in the Children's Department. This is the teaching hospital of the University of Durham and it is desired that applicants should have previous experience in general medicine or general practice. Appointment will start with work in the wards and clinics of the department and later include periods of duty in the associated Babies' Hospital and Pædiatric Department of the Princess Mary Maternity Hospital, thus offering opportunity for a comprehensive training in pædiatric and clinical research. This appointment, which is non-resident, will be for 1 year in the first instance, subject to the Ministry of Health terms and conditions of service for hospital medical and dental staffs, and will be in the grade of Registrar at a salary of £775 or £890 p.a., according to the qualifications and experience of successful candidate.

Applications, giving age, nationality, experience, and qualifications, with names and addresses of 3 referees, should be sent by 8th April, 1950, to—

A. W. SANDERSON, House Governor and Secretary.
Royal Victoria Infirmary, Newcastle upon Tyne.

NEWCASTLE UPON TYNE. THE UNITED NEWCASTLE UPON TYNE HOSPITALS. ROYAL VICTORIA INFIRMARY. Required, Whole-time SENIOR SURGICAL REGISTRAR in the first year. Successful candidate will have opportunity for clinical experience in outpatient and inpatient work under the direction of the Head of the clinic, and will be responsible for clinical emergency duty as required. This is the teaching hospital of the University of Durham and successful candidate will be required to teach in his subject principally at the Royal Victoria Infirmary. Successful candidate must hold a Fellowship of the Royal College of Surgeons. Salary £1000 p.a. for first year. Appointment for 1 year renewable to a maximum of 3 years and subject to Ministry of Health terms and conditions of service.

Applications, giving age, nationality, experience, and qualifications, with names and addresses of 3 referees, should be sent by 8th April, 1950, to—

A. W. SANDERSON, House Governor and Secretary.
Royal Victoria Infirmary, Newcastle upon Tyne.

NORTHALLERTON. FRIARAGE (GENERAL) HOSPITAL. HOUSE OFFICERS (A) or (B2), 2 vacancies. Required, House Surgeon for orthopædic duties and House Officer for general surgical and medical duties at above Hospital of 300 Beds, of which approximately 200 are at present occupied. Salary in accordance with scale for appropriate grade in Ministry of Health terms and conditions for hospital medical staff. Appointment in first place for 6 months and then renewable every 6 months.

Applications, giving age, qualifications, and experience, with names of 2 referees, to be sent to the Secretary, Northallerton Hospital Management Committee, Friarage Hospital, Northallerton, Yorks, as soon as possible.

NORTHAMPTON. ST. ANDREW'S HOSPITAL (for Nervous and Mental Disorders). Applications invited from registered medical practitioners for appointment of PSYCHIATRIC REGISTRAR (B1). Post graded as Junior Registrar or Registrar according to the candidate's previous experience. Salary in accordance with national scale. Opportunities for experience in all branches of psychiatry including outpatient clinics.

Applications to be addressed to the Medical Superintendent.

NORTHAMPTON. ST. ANDREW'S HOSPITAL (for Nervous and Mental Disorders). Applications invited from registered medical practitioners for appointment of Locum Tenens MEDICAL OFFICER (B1) during holiday season until autumn. Previous psychiatric experience not necessary. Salary 13 guineas per week, plus residential emoluments.

Applications to be addressed to the Medical Superintendent.

NEWPORT, MON. ROYAL GWENT HOSPITAL. (256 Beds.) Required, INTERMEDIATE REGISTRAR IN ANÆSTHETICS. Successful candidate will be based at the Royal Gwent Hospital but will be required to attend periodically at other hospitals in this group. Commencing salary £775 p.a., in accordance with the terms, and conditions of Hospital medical staff.

Apply, with names of 3 persons for reference, to—
17, Cardiff-road, Newport, Mon. T. A. JONES, Secretary.

NEWPORT, MON. ROYAL GWENT HOSPITAL. (256 Beds.) Required, HOUSE OFFICER (A) or (B2) for E.N.T. Department. Salary £350–£450 p.a., according to number of previous posts held, less £100 p.a. for full residential emoluments. Post recognised for the D.L.O. and is for 6 months in the first instance.

Apply, with names of 3 persons for reference, to—
17, Cardiff-road, Newport, Mon. T. A. JONES, Secretary.

NEWPORT, MON. ROYAL GWENT HOSPITAL. (256 Beds.) Required, INTERMEDIATE REGISTRAR for the E.N.T. Department. Successful candidate will be based at the Royal Gwent Hospital, but will be required to attend at other Hospitals in this and neighbouring groups as required. Commencing salary £775 p.a. rising to £890 in the second year.

Apply, with names of 3 persons for reference, to—
17, Cardiff-road, Newport, Mon. T. A. JONES, Secretary.

NEWPORT, MON. ROYAL GWENT HOSPITAL. (256 Beds.) Required, HOUSE OFFICER (medical) for Dermatology and Venereal Diseases. Post recognised for the Ministry of Health Certificate in Venereal Diseases. Successful candidate will be based at the Royal Gwent Hospital, Newport, but will also be required to attend at St. Woolos Hospital, Newport (402 Beds).

Apply, with names of 2 persons for reference, to—
17, Cardiff-road, Newport, Mon. T. A. JONES, Secretary.

NEWPORT, MON. ROYAL GWENT HOSPITAL. (256 Beds.) Required, HOUSE OFFICER (A) or (B2), orthopædic, for the Fracture and Orthopædic Unit. Appointment recognised for the Fellowship of the Royal College of Surgeons. Salary £350–£450 p.a., in accordance with number of previous appointments held, less a deduction of £100 p.a. for full residential emoluments.

Apply, with names of 2 persons for reference, to—
17, Cardiff-road, Newport, Mon. T. A. JONES, Secretary.

NORTHWOOD, MIDDLESEX. MOUNT VERNON HOSPITAL AND THE RADIUM INSTITUTE. Required, HOUSE SURGEON (A) or (B2) combining urology, orthopædic, and ophthalmic work, vacant immediately.

Applications, accompanied by testimonials, to be forwarded immediately to the Secretary and House Governor.

OLDHAM AND DISTRICT HOSPITAL MANAGEMENT COM-MITTEE. Applications invited from suitably qualified medical practitioners for appointment of ANÆSTHETIC REGISTRAR (B1), which may be in the grade of Registrar or Junior Registrar, according to qualifications and experience. Preference given to applicants holding or studying for the D.A. The conditions of service will be as laid down by the Ministry of Health. Appointment will be whole-time.

Applications, stating age, experience, qualifications, and containing names of 2 people to whom reference may be made, should be forwarded immediately to—

F. W. BARNETT, Secretary.
Central Offices, Rochdale-road, Oldham.

OLDHAM. BOUNDARY PARK GENERAL HOSPITAL. (390 Beds.) Required, HOUSE PHYSICIAN (A) or (B2). Salary £350 p.a.–£450 p.a., according to number of positions previously held, less £100 p.a. for residential emoluments. Appointment of a practitioner within 3 months of qualification and subject to the National Service Acts would be limited to 6 months.

Applications, containing details of qualifications and experience, with copies of 2 recent testimonials, should be forwarded immediately to— F. W. BARNETT, Secretary,
Oldham and District Hospital Management Committee.
Central Offices, Rochdale-road, Oldham.

OLDHAM. BOUNDARY PARK GENERAL HOSPITAL. (390 Beds.) Required, HOUSE SURGEON (A) or (B2). Salary £350 p.a.–£450 p.a., according to number of positions previously held, less £100 p.a. for residential emoluments. Appointment of a practitioner within 3 months of qualification and subject to the National Service Acts would be limited to 6 months.

Applications, containing details of qualifications and experience, with copies of 2 recent testimonials, should be forwarded immediately to— F. W. BARNETT, Secretary,
Oldham and District Hospital Management Committee.
Central Offices, Rochdale-road, Oldham.

OLDHAM ROYAL INFIRMARY. (200 Beds.) Required, 2 RESIDENT GENERAL HOUSE SURGEONS (A) or (B2), who in addition will undertake duties in the Casualty Department. Salary £350 p.a.–£450 p.a., according to the number of positions previously held, less £100 p.a., for residential emoluments. Appointment of a practitioner within 3 months of qualification and subject to the National Service Acts would be limited to 6 months.

Applications, containing details of qualifications and experience, with copies of 2 recent testimonials, should be forwarded immediately to—

F. W. BARNETT, Secretary,
Oldham and District Hospital Management Committee.
Central Offices, Rochdale-road, Oldham.

OLDHAM. WESTHULME ISOLATION HOSPITAL. (85 Beds.) Required, RESIDENT MEDICAL OFFICER (B1). Appointee to this position will, in addition to the duties which it will be necessary for him to undertake at above Hospital, be expected to assist at one or more of the Hospitals within the group. Salary in accordance with the National Health Service scale for third and subsequent posts, and authority has been obtained for the payment of a salary £50 higher than the standard rate —namely, £500 p.a., less a reduction of £100 p.a. for residence. Suitably qualified R practitioners holding B2 appointments, also those holding B1 posts and ineligible for H.M. Forces, are invited to apply.

Applications, giving details of qualifications and experience, with copies of 2 recent testimonials, should be forwarded immediately to—

F. W. BARNETT, Secretary,
Oldham and District Hospital Management Committee.
Central Offices, Rochdale-road, Oldham.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL, Freedom Fields, PLYMOUTH. Required, JUNIOR SURGICAL REGISTRAR, post vacant immediately. Appointment for 1 year. Salary and conditions in accordance with National Health terms of service of hospital medical and dental staffs—£670 p.a. Suitably qualified R practitioners holding B2 appointments, and those holding B1 posts and ineligible for H.M. Forces, are invited to apply.

Applications, stating age, nationality, qualifications, and experience, with names and addresses of 3 referees, should be sent by 6th April, 1950, to—

ARTHUR R. CASH, Secretary, Plymouth,
South Devon and East Cornwall General Hospital Group.
c/o South Devon and East Cornwall Hospital,
Greenbank-road, Plymouth.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL, Freedom Fields, PLYMOUTH. Required, RESIDENT ANÆSTHETIST (B2), post vacant 22nd March, 1950. Salary in accordance with National Health Service scale. R practitioners holding A posts and who have not completed a 5 months' tenure of those posts may apply, when appointment will be limited to 6 months.

Applications, stating nationality, qualifications and experience, with 3 recent testimonials, should be sent to—

ARTHUR R. CASH, Secretary,
Plymouth, South Devon and East Cornwall General Hospital Management Committee.
c/o South Devon and East Cornwall Hospital,
Greenbank-road, Plymouth.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL, Greenbank-road, PLYMOUTH. Required, RESIDENT ANÆSTHETIST (B2), post vacant 30th April. Salary and conditions of service in accordance with the National Health Service terms, with residential emoluments. R practitioners holding A posts and who have not completed a 5 months' tenure of those posts may apply, when appointment will be limited to 6 months.

Applications, stating age, nationality, qualifications and experience, with 3 recent testimonials, to be sent to—

ARTHUR R. CASH, Secretary, Plymouth,
South Devon and East Cornwall General Hospital Group.
c/o South Devon and East Cornwall Hospital,
Greenbank-road, Plymouth, 11th March, 1950.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL GENERAL HOSPITAL GROUP. Applications invited from registered medical practitioners for following appointments :—

South Devon and East Cornwall Hospital, Devonport
SENIOR HOUSE SURGEON (B2), vacant 7th April.

South Devon and East Cornwall Hospital, Plymouth. Department of Obstetrics and Gynæcology (125 Maternity and 42 Gynæcology Beds)
HOUSE SURGEON (B2), for obstetrics and gynæcology, vacant 1st May. There will be additional duties at the Flete Maternity Home and the Alexandra Maternity Home, Devonport, which are parts of the department.

South Devon and East Cornwall Hospital, Greenbank-road, Plymouth
HOUSE PHYSICIAN (B2), vacant 29th June.
R practitioners, who hold A posts, and who have not completed a 5 months' tenure of those posts, may apply for above appointments.

South Devon and East Cornwall Hospital, Greenbank-road, Plymouth
HOUSE SURGEONS (A), vacant 1st May.
E.N.T. HOUSE SURGEON (A), vacant 1st April.

South Devon and East Cornwall Hospital, Freedom Fields, Plymouth
HOUSE SURGEONS (A), vacant 1st April.
Practitioners within 3 months of qualification and liable under the National Service Acts may apply for above appointments, when they will be for a period of 6 months.

ARTHUR R. CASH, Secretary.
c/o South Devon and East Cornwall Hospital,
Greenbank-road, Plymouth.

PORTSMOUTH. ROYAL PORTSMOUTH HOSPITAL. (305 Beds.) PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (B2). 6 months' appointment. Salary in accordance with the National Health Service terms and conditions of service of hospital medical and dental staffs (England and Wales). R practitioners holding A posts may apply.

Applications, giving full details of experience, age, and nationality, with copies of 3 recent testimonials, should be submitted as soon as possible to the Assistant Secretary, Royal Portsmouth Hospital.

PORTSMOUTH. ROYAL PORTSMOUTH HOSPITAL. (305 Beds.) PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, ORTHOPÆDIC HOUSE SURGEON (B2). 6 months' appointment. Salary in accordance with National Health Service terms and conditions of service of hospital medical and dental staffs (England and Wales). R practitioners holding A posts may apply.

Applications, giving full details of experience, age and nationality, with copies of 3 recent testimonials, should be submitted as soon as possible to the Assistant Secretary, Royal Portsmouth Hospital.

PORTSMOUTH. SAINT MARY'S HOSPITAL. (1059 Beds.) PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. RESIDENT MALE HOUSE PHYSICIAN (A) for Pædiatric Department (60 Beds). Post tenable for 6 months. Salary in accordance with terms of service for hospital medical staff. R practitioners within 3 months of qualification and liable under National Service Acts may apply.

Applications, stating age, experience, and qualifications, and names of 2 referees, to be sent immediately to the Medical Superintendent, Saint Mary's Hospital, Portsmouth.

PENZANCE. WEST CORNWALL HOSPITAL. (116 Beds.) WEST CORNWALL HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE SURGEON (A) or (B2), vacant 27th March, 1950. Salary £350–£450 p.a., depending on experience, with £100 p.a. deduction for board and lodging.

Applications, stating age, qualifications, and experience, with copies of 2 testimonials, should be forwarded to the Administrative Assistant, West Cornwall Hospital, Penzance.

PONTEFRACT GENERAL INFIRMARY AND THE HYDES HOSPITAL. (92 Beds.) Applications invited for following appointments :—

RESIDENT SURGICAL OFFICER (B1). 6 months' appointment. Salary £450 p.a., less £100 p.a. for residential emoluments. Suitably qualified R practitioners holding B2 appointments, also those holding B1 posts and ineligible for H.M. Forces, are invited to apply.

HOUSE SURGEON AND CASUALTY OFFICER (A), Male. 6 months' appointment. Salary £350 p.a., less £100 p.a. for residential emoluments.

HOUSE PHYSICIAN (A), Male. 6 months' appointment. Salary £350 p.a., less £100 p.a. for residential emoluments.

R practitioners within 3 months of qualification may apply for the A posts.

Applications should be sent to—

W. BOWRING, Secretary, Pontefract and
Castleford Hospital Management Committee.
Southgate, Pontefract.

RAMSGATE. THE GENERAL HOSPITAL. (101 Beds.) Isle of THANET HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE OFFICER (B2). Appointment for 6 months. Salary £400–£450 p.a., less £100 for residential emoluments. R practitioners holding A posts may apply.

Applications, stating age and qualifications, with copies of 3 recent testimonials, should be sent as soon as possible to the Administrator, The General Hospital, Ramsgate.

READING. ROYAL BERKSHIRE HOSPITAL. (383 Beds.) Reading AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications invited from Male registered medical practitioners for appointment of HOUSE SURGEON (B2) to the Gynæcological Department, vacant 1st May, 1950, for 6 months. Salary £400–£450 p.a., according to experience, less £100 for residential emoluments. R practitioners holding A posts may apply.

Applications, stating age, qualifications with dates, nationality, present post, with copies of 3 recent testimonials, should be sent to the Administrative Officer, Royal Berkshire Hospital, Reading.

READING. ROYAL BERKSHIRE HOSPITAL. (383 Beds.) Required, HOUSE SURGEON (A) or (B2), Male, post vacant 24th April, 1950. Appointment for 6 months. Salary within the range £350–£450 p.a., according to experience, less £100 p.a. for board-residence, &c. R practitioners within 3 months of qualification may apply.

Application, stating age, qualifications with dates, nationality, present post, with copies of 3 recent testimonials, should be sent to Administrative Officer, Royal Berkshire Hospital, Reading.

REDRUTH, CORNWALL. CAMBORNE-REDRUTH MINERS' AND GENERAL HOSPITAL. (159 Beds.) WEST CORNWALL HOSPITAL MANAGEMENT COMMITTEE. Required, JUNIOR HOUSE SURGEON (B2), Obstetrical and Gynæcological Departments, post vacant 1st June, 1950. Appointment for 6 months. Successful applicant will act as Junior House Surgeon for the first 3 months and Senior House Surgeon for the second 3 months. Hospital has been recognised in obstetrics for M.R.C.O.G. Salary £400–£450, according to experience, with £100 deduction in respect of board and lodging, &c.

Applications, stating age, qualifications, and experience, with copies of 3 testimonials, should be forwarded to the Administrative Assistant, Camborne-Redruth Miners' and General Hospital, Redruth, Cornwall by 8th April, 1950.

ROCHDALE INFIRMARY. (General—109 Beds.) Required, RESIDENT CASUALTY OFFICER (A). 6 months' appointment. This appointment is recognised by the Royal College of Surgeons for 6 of the 12 months period of surgical training required of candidates for the Final Fellowship Examinations. Salary in accordance with the terms of service for hospital medical staff in the National Health Service. R practitioners within 3 months of qualification may apply.

Applications should be sent to the undersigned immediately.

S. HODKINSON, Secretary,
Rochdale and District Hospital Management Committee.
132, Drake-street, Rochdale.

ROCHFORD. GENERAL HOSPITAL. (338 Beds.) Required, RESIDENT HOUSE SURGEON (A) or (B2). Post now vacant and tenable for 6 months. Salary £350 a year to £450 a year, according to number of posts held. A deduction of £100 a year will be made in respect of residential emoluments.

Application, stating age, nationality, qualifications with dates, and experience, with copies of 2 recent testimonials, should be forwarded to the Medical Superintendent at the General Hospital, Rochford, Essex.

J. C. FIELD, Secretary,
Southend-on-Sea Hospital Management Committee.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (725 Beds.) Required, Whole-time MEDICAL REGISTRAR (B1) at above Hospital, which is an acute general hospital with specialised departments. Candidates must have held previous hospital appointments and have had good experience in general medicine. Resident quarters will be available in the Hospital for successful candidate, but consideration will be given to applicants who desire to be non-resident. Salary, &c., in accordance with the national terms and conditions of service. Appointment for 12 months in the first instance.

Applications, stating age, qualifications, present appointment, and experience, with names of 2 referees, should be forwarded immediately to the Secretary, Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (725 Beds.) Required, Whole-time REGISTRAR (B1) in the Casualty and Admissions Department at above Hospital. Successful candidate required to commence duty 3rd June, 1950. Resident quarters will be available in the Hospital for the successful candidate, but consideration will be given to applicants who desire to be non-resident. Salary, &c., in accordance with the national terms and conditions of service. Appointment for 12 months in the first instance. Suitably qualified R practitioners holding B2 appointments are invited to apply.

Applications, stating age, qualifications, present appointment, and experience, with names of 2 referees, should be forwarded immediately to the Secretary, Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (725 Beds.) Required HOUSE OFFICER (A) or (B2) in the Obstetric and Gynæcological Unit. This department consists of 88 Obstetric and 52 Gynæcological Beds. Appointment recognised for D.Obst.R.C.O.G. and M.R.C.O.G. Salary £350–£450 a year, according to previous posts held, less £100 p.a. for board and residence in accordance with the nationally agreed terms and conditions of service (House Officers). Resident post tenable for 6 months in the first instance.

Applications, giving details of age, qualifications, and experience, with names of 2 referees, should be sent immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford, Essex.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (725 Beds.) Applications invited for whole-time appointments of :—

REGISTRAR ANÆSTHETIST (B1),

JUNIOR REGISTRAR ANÆSTHETIST (B1),

at above Hospital. Resident quarters will be available in the Hospital for successful candidates but consideration will be given to applicants who desire to be non-resident. For the Registrar post successful candidate must hold the D.A. The Hospital offers good opportunity for gaining further experience in the administration of anæsthetics. Salary, &c., in accordance with national terms and conditions of service. Applications from practitioners holding B1 posts cannot be considered unless ineligible for H.M. Forces.

Applications (stating post applied for), giving age, qualifications, present appointment and details of experience, with names of 3 referees, should be forwarded to the Secretary, Hospital Management Committee, Oldchurch Hospital, Romford, within 1 week of appearance of this advertisement.

ROMFORD, ESSEX. VICTORIA HOSPITAL. (91 Beds.) Required, HOUSE OFFICER (general surgery) at the above Hospital, now vacant. Post tenable for 6 months. Salary in accordance with terms and conditions of service issued by the Ministry of Health, less £100 p.a. for residential emoluments. Appointment subject to National Health Service superannuation regulations.

Applications, stating (in order) age, qualifications, present appointment, and experience, with names of 2 referees, should be forwarded immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD. VICTORIA HOSPITAL. (91 Beds.) Required, HOUSE PHYSICIAN (A) or (B2), post vacant 1st May, 1950. Resident post, tenable for 6 months. Salary £350–£450 a year, according to previous posts held, less £100 p.a., for board and residence, in accordance with the nationally agreed terms and conditions of service (House Officers).

Applications, giving details of age, qualifications, and experience, with names of 2 referees, should be sent immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

RUGBY. HOSPITAL OF ST. CROSS.

HOUSE SURGEON required to the Obstetric and Gynæcological Department of 42 Beds, vacant 2nd April, 1950.

HOUSE SURGEON required to the Orthopædic and Accident Unit of 40 Beds, vacant 9th April, 1950.

Applications, stating age, qualifications, and experience, with copy of testimonial, should be addressed to the Assistant Secretary, Hospital of St. Cross, Rugby.

SALFORD. HOPE HOSPITAL. Salford Hospital Management COMMITTEE. JUNIOR REGISTRAR ANÆSTHETIST (B1) required. Salary in accordance with the general conditions of the National Health Service Act.

Applications, giving names of 3 referees, to be addressed to the Superintendent, Hope Hospital, Salford, 6, Lancs, to arrive by 19th April, 1950.

SCARBOROUGH HOSPITAL, Yorkshire. (163 Beds.) Required, RESIDENT HOUSE SURGEON (A) or (B2), Male or Female. Salary in accordance with the national scale, and appointment for 6 months.

Applications, stating age and qualifications, with testimonials, to be sent to the Secretary.

SHEFFIELD. THE UNITED SHEFFIELD HOSPITALS. The ROYAL HOSPITAL UNIT. Required, ORTHOPÆDIC HOUSE SURGEON (A), Male or Female. Salary and conditions of service in accordance with recognised scale. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for 6 months; otherwise may be extended.

Applications, and copy testimonials, to be forwarded immediately to A. P. PRENTICE, Superintendent.

The Royal Hospital, West-street, Sheffield, 1.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD invite applications from suitably qualified medical practitioners for appointment of Whole-time PHYSICIAN (Senior Registrar/Registrar grading in accordance with experience) at the Royal Infirmary, Glasgow. Appointment subject to the National Health Service (Scotland) superannuation regulations.

Applications (16 copies), stating age, qualifications, and experience, and present appointment, giving names of 3 referees, should be submitted by 24th April, 1950, to the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, C.2.

SCOTLAND. SOUTH-EASTERN REGIONAL HOSPITAL BOARD. ROSSLYNLEE AND HADDINGTON MENTAL HOSPITALS BOARD OF MANAGEMENT. Required, HOUSE OFFICER (A) or (B2) at Rosslynlee Mental Hospital. Previous psychiatric experience not essential. Salary £350–£450 p.a., less £100 p.a. for residential emoluments. This Hospital is 10 miles from Edinburgh and provides good experience in all modern methods of treatment. There are good recreational facilities.

Applications, stating age, qualifications, and experience, should be sent to the Medical Superintendent, Rosslynlee Mental Hospital, Rosslyn Castle, Midlothian.

SCUNTHORPE AND DISTRICT WAR MEMORIAL HOSPITAL. (256 Beds.) RESIDENT HOUSE SURGEON (A) required immediately, Male or Female. Salary in accordance with national scale.

Applications, with names of referees or copy testimonials, to the Secretary, Scunthorpe Hospital Management Committee, The War Memorial Hospital, Scunthorpe, Lincs.

SHREWSBURY. ROYAL SALOP INFIRMARY AND COPTHORNE HOSPITAL. (500 Beds.) Required, HOUSE SURGEON (B2), Male or Female, post vacant 31st March, 1950. Appointment recognised for the F.R.C.S. Salary £400–£450 p.a., according to experience, less £100 p.a. for residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for 6 months.

Applications, stating age, qualifications, nationality, and experience, with copy testimonials, should be sent to—

J. P. MALLETT, Secretary,
Group 15 Hospital Management Committee.
Royal Salop Infirmary, Shrewsbury.

SHREWSBURY. ROYAL SALOP INFIRMARY. (240 Beds.) Required, CASUALTY OFFICER (A), Male or Female, post vacant 30th March, 1950. Salary £350–£450 p.a., according to experience, less £100 p.a. for residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for 6 months; otherwise it will be extended.

Applications, stating age, qualifications, nationality, and experience, with copy testimonials, should be sent to—

J. P. MALLETT, Secretary,
Group 15 Hospital Management Committee.
Royal Salop Infirmary, Shrewsbury.

SHOTLEY BRIDGE GENERAL HOSPITAL, co. Durham. (550 Beds.) Applications invited from medical practitioners, preferably holding a higher qualification in medicine, for appointment of RESIDENT MEDICAL REGISTRAR (B1). Salary in accordance with the terms and conditions of service for hospital medical and dental staffs (England and Wales) for a Registrar or Senior Registrar. Grading will be in accordance with qualifications and experience. A charge of £150 p.a. will be made for residence.

Applications, stating age, nationality, qualifications, experience, &c., and names of 3 persons for reference, should be addressed to undersigned as soon as possible.

A. LAWTHER, F.C.C.S., A.H.A., Secretary,
North West Durham Hospital Management Committee.
Shotley Bridge General Hospital, Shotley Bridge, co. Durham.

SIDCUP AND SWANLEY HOSPITAL MANAGEMENT COMMITTEE invite applications from suitably qualified medical practitioners for appointment as SENIOR REGISTRAR IN GENERAL SURGERY, for duty at hospitals in the Group. Candidates should possess a higher qualification in surgery and satisfy the criteria for such appointments, as laid down in the terms and conditions of service of hospital medical and dental staffs (England and Wales). Salary within scale £1000–£1300 p.a.

Applications, giving particulars of age, qualifications, and experience with relevant dates, with names of 3 referees, should be sent to the Secretary, Sidcup and Swanley Hospital Management Committee, Queen Mary's Hospital, Sidcup, Kent, by 11th April, 1950.

SKIPTON GENERAL HOSPITAL, Skipton, Yorkshire, West RIDING. (64 Beds.) Required, HOUSE SURGEON (B2), vacant now. 6 months' appointment. Salary in accordance with the National Health Service terms and conditions of hospital medical and dental staffs (England and Wales). R practitioners holding A posts and newly qualified practitioners may apply.

Applications, stating age, qualifications, experience, and nationality, with copies of recent testimonials, to be forwarded as soon as possible to the Secretary, Bingley, Keighley, Skipton and Settle Hospital Management Committee, Administrative Offices, St. John's Hospital, Fell-lane, Keighley. Canvassing in any form is prohibited.

SOUTHAMPTON. ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL. (290 Beds.) Required, ORTHOPÆDIC HOUSE SURGEON (B2), resident, post now vacant. Tenable for 6 months. This Hospital provides a comprehensive orthopædic service and is the centre to which all trauma from a large industrial town and port is directed. Salary £350–£450 p.a., according to number of posts previously held, less £100 p.a. for residential emoluments. Terms and conditions of service as laid down by the Ministry of Health.

Applications, with copies of testimonials, to be submitted as soon as possible to the Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

ST. ALBANS. CELL BARNES COLONY. Required, Senior REGISTRAR for this Colony of 629 Beds. Candidates must have adequate experience and, preferably, the D.P.M. Successful applicant will deputise for the Medical Superintendent when required. Salary and conditions of service as officially laid down by the Ministry. Residential emoluments available at usual valuation. Good facilities for further postgraduate study and for teaching.

Detailed application should be sent to the Medical Superintendent.

ST. ALBANS CITY HOSPITAL. Resident House Physician (B2) for general duties and Medical Departments. Appointment for 6 months. Salary in accordance with terms and conditions of hospital medical staff.

Applications, stating age and experience, with copies of recent testimonials, to be forwarded to the Secretary, Osterhills, Normandy-road, St. Albans.

ST. HELENS HOSPITAL. Required, Resident House Physician (A) or (B2). Appointment tenable for 6 months. Salary £350–£450 p.a., according to previous appointments, which includes residential emoluments valued at £100 p.a. R practitioners within 3 months of qualification or holding A posts may apply.

Applications to be forwarded as soon as possible to—
N. RICHARDS, Secretary, St. Helens and
District Hospital Management Committee.
Group Office, County Hospital, Whiston, near Prescot, Lancs.

ST. HELENS HOSPITAL. (183 Beds.) Applications invited from suitably qualified R practitioners for following posts :—

RESIDENT ANÆSTHETIST AND CASUALTY OFFICER (B2). 6 months' appointment. Salary £400–£450, less £100 for residential emoluments.

RESIDENT HOUSE SURGEON (A) or (B2). 6 months' appointment. Salary £350–£450, less £100 for residential emoluments.

The St. Helens Hospital, comprising 183 Beds, has 6 resident Medical Officers and a full staff of Visiting Consultants. The work is mainly of a surgical nature, and includes obstetrics, gynæcology, E.N.T., and orthopædics.

Applications to be forwarded to the undersigned as soon as possible.
N. RICHARDS, Secretary, St. Helens and
District Hospital Management Committee,
Group Office, County Hospital, Whiston,
near Prescot, Lancs.

ST. LEONARDS-ON-SEA. BUCHANAN HOSPITAL. Required, HOUSE OFFICER (Surgeon) at above Hospital. Appointment for 6 months and salary within scale £350–£400–£450 p.a., dependent on experience and posts held. A deduction of £100 p.a. will be made for full residential emoluments.

Applications, with copies of recent testimonials, to be sent to the Administrator of the Hospital.
H. A. FROGGATT, Secretary,
Hospital Management Committee (Hastings Group).
11, Holmesdale-gardens, Hastings.

SOUTH EAST ESSEX HOSPITAL MANAGEMENT COMMITTEE. TILBURY AND RIVERSIDE GENERAL HOSPITAL. TILBURY BRANCH. Applications invited for appointment of SENIOR REGISTRAR (Anæsthetist). Salary £1000–£1300 p.a. Appointment will be non-resident, and will be based at Tilbury Hospital. Appointee will be required to carry out certain duties at other hospitals in the group—namely, St. Andrew's Hospital, Billericay, and Orsett Lodge Hospital, Orsett.

Applications, giving names of 3 referees, should be forwarded to the Acting Secretary, Thurrock Hospital, Grays, as soon as possible.

SOUTH EAST ESSEX HOSPITAL MANAGEMENT COMMITTEE. ORSETT, TILBURY AND ST. ANDREW'S HOSPITALS. A vacancy exists for a SENIOR ORTHOPÆDIC REGISTRAR at above Hospitals. Applications are invited from candidates who possess a higher degree or diploma in surgery and who otherwise comply with the statutory requirements of the grading of Senior Registrar. Candidates should have previous experience in orthopædic and fracture surgery. Duties will include such clinical responsibilities as will be delegated by the Consultant Orthopædic Staff for the area as well as attendance at "follow-up" clinics. Post is resident (for a single man) or non-resident and subject to the terms and conditions of service under the National Health Service Act.

Applications, with names of 3 referees, to be sent by 1st April to the undersigned from whom further information can be obtained. G. E. WHYTE, Acting Secretary.

SOUTHEND-ON-SEA GENERAL HOSPITAL, Prittlewell Chase. (250 Beds.) Required, 2 RESIDENT HOUSE SURGEONS (A) or (B2). One post now vacant, second post vacant 1st April. Salary £350–£450 p.a., according to previous appointments held, less £100 a year for residential emoluments.

Applications should be sent to undersigned at the Hospital by 29th March, 1950. J. C. FIELD, Secretary.

SOUTH SHIELDS. GENERAL HOSPITAL. South Shields District HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE PHYSICIAN (A), Male or Female, post now vacant and tenable for 6 months with salary in accordance with National Health Service scale.

Applications to be addressed to the Medical Superintendent, General Hospital, Harton-lane, South Shields, as soon as possible.

STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE invite applications for post of OBSTETRICAL AND GYNÆCOLOGICAL HOUSE SURGEON (B2), Male or Female, now vacant and is for 6 months in the first instance. Post recognised for D.Obst. R.C.O.G. and candidates should have held a House Surgeon post. Salary £400 or £450 p.a., less £100 p.a., for emoluments in accordance with terms and conditions of service of hospital medical and dental staffs.

Applications, stating age, qualifications, nationality, with copies of recent testimonials, to be sent to the Medical Superintendent, City General Hospital, Stoke-on-Trent.
THORNBURROW GIBSON, Secretary.

STOKE-ON-TRENT. NORTH STAFFS ROYAL INFIRMARY. (475 Beds.) Required, REGISTRAR (grade 2) to the Gynæcological and Obstetrical Department, post now vacant. The terms and conditions of service for hospital medical and dental staffs will apply.

Applications, giving full particulars of experience with copies of recent testimonials, should be addressed to undersigned and forwarded forthwith.
THORNBURROW GIBSON, Secretary,
Stoke-on-Trent Hospital Management Committee.

STOKE-ON-TRENT. NORTH STAFFS ROYAL INFIRMARY. (475 Beds.) Required, REGISTRAR (grade 2) to the Ophthalmic Department, post now vacant. The terms and conditions of service for hospital medical and dental staffs will apply.

Applications, giving full particulars of experience, with copies of recent testimonials, should be addressed to undersigned and forwarded forthwith.
THORNBURROW GIBSON, Secretary,
Stoke-on-Trent Hospital Management Committee.

STOKE-ON-TRENT. CITY GENERAL HOSPITAL. (1000 Beds.) STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE invite applications for post of RESIDENT CLINICAL PATHOLOGIST, with status of Junior Registrar, at above Hospital. The terms and conditions of service for hospital medical and dental staffs will apply.

Applications, with copies of at least 2 recent testimonials, should be forwarded as soon as possible to—
THORNBURROW GIBSON, Secretary,
Stoke-on-Trent Hospital Management Committee.
Princes-road, Hartshill, Stoke-on-Trent.

STARCROSS, DEVON. THE ROYAL WESTERN COUNTIES HOSPITAL GROUP. Applications invited for SENIOR REGISTRAR. Salary and conditions of service as issued by Ministry of Health. Exceptional opportunity offered for experience in training and social care all types mental defectives. Group comprises ancillary institutions in Devon and Cornwall. If desired, post can be non-resident.

Further particulars can be obtained from, and applications, stating age, qualifications, experience, with names and addresses of 3 referees, to be sent to, Medical Superintendent, Royal Western Counties Hospital Group, Executive Offices, Starcross, Devon.

STARCROSS, DEVON. THE ROYAL WESTERN COUNTIES HOSPITAL GROUP. Applications invited from medical practitioners for appointment as LOCUM TENENS, period not less than 6 months. Preferably with some knowledge of mental deficiency. Salary 20 guineas per week, plus residential emoluments.

Applications to the Medical Superintendent, Royal Western Counties Hospital Group, Executive Offices, Starcross, Devon.

SUNDERLAND AREA HOSPITAL MANAGEMENT COMMITTEE. Applications invited for following posts :—

Children's Hospital, Sunderland (70 Beds—recognised for D.C.H.)

FEMALE JUNIOR REGISTRAR PÆDIATRICIAN (B1) resident, to commence 4th April, 1950.

General Hospital, Sunderland (681 Beds)

JUNIOR REGISTRAR or REGISTRAR ANÆSTHETIST (B1), according to status and experience, resident or non-resident, post now vacant.

Salaries and conditions of service in accordance with the National Health Service regulations. Applications from practitioners holding B1 posts cannot be considered unless ineligible for H.M. Forces.

Applications, stating age, nationality, qualifications, and experience, with names of 2 referees, to—
F. DAGNALL, Secretary,
Sunderland Area Hospital Management Committee.
General Hospital, Sunderland.

SUNDERLAND AREA HOSPITAL MANAGEMENT COMMITTEE. GERIATRIC UNIT. Required, REGISTRAR IN GERIATRICS (B1). Grading of post will be either Junior Registrar or Registrar, according to experience and qualifications. The Geriatric Unit is in charge of a Consultant Physician. Extensive clinical experience is afforded in diagnosis and treatment of medical cases (females over 60 years and males of 65 years), acute and chronic. Terms and conditions of service for hospital medical staff apply. Appointment limited in the first instance to 12 months, but may be renewed at the discretion of the Management Committee.

Applications, giving details of age, qualifications, experience, &c., with 2 names for reference, should reach F. DAGNALL, Secretary, Sunderland Area Hospital Management Committee within 14 days of appearance of this advertisement.

SUNDERLAND AREA HOSPITAL MANAGEMENT COMMITTEE. GENERAL HOSPITAL, SUNDERLAND. (750 Beds.) **GENERAL HOSPITAL, RYHOPE.** (234 Beds.) Required, MEDICAL REGISTRAR (B1) to work in the Medical Clinical Team No. 2. Grading as Junior Registrar or Registrar will be dependent upon qualifications and experience.

Applications, stating age, nationality, qualifications, and experience, with names of 2 referees, should reach F. DAGNALL, Secretary, Sunderland Area Hospital Management Committee, within 7 days of appearance of this advertisement.

SUNDERLAND AREA HOSPITAL MANAGEMENT COMMITTEE. DEPARTMENT OF PATHOLOGY. Required, NON-RESIDENT REGISTRAR IN PATHOLOGY (B1), Bacteriologist, in above Department, the headquarters of which are situated at the Royal Infirmary, Sunderland. Grading as Registrar or Senior Registrar will depend on the experience and qualifications of successful candidate. Terms and conditions of service for hospital medical staff apply.

Applications, stating age, nationality, qualifications, and experience, with names of 3 referees, should reach F. DAGNALL, Secretary, Sunderland Area Hospital Management Committee, General Hospital, Sunderland, within 7 days of appearance of this advertisement.

SUNDERLAND. GENERAL HOSPITAL. Required, Resident HOUSE PHYSICIAN (A) or (B2) for the Geriatric Unit of 300 Beds at above Hospital. Good experience is afforded in the treatment of acute and chronic medical conditions. Terms and conditions of service for hospital medical staff apply.

Applications, giving details of age and qualifications, with 2 names for reference, should reach F. DAGNALL, Secretary, Sunderland Area Hospital Management Committee, The General Hospital, Sunderland, within 14 days of appearance of this advertisement.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 1 year) for post of JUNIOR REGISTRAR on the Medical Unit at above Hospital. Successful candidate will be non-resident and appointment will be for 1 year. Salary £670 p.a.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 1 year) for post of JUNIOR REGISTRAR IN OPHTHALMOLOGY at above Hospital. Successful candidate will be non-resident and the appointment will be for 1 year. Salary £670 p.a.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 2 years) for post of REGISTRAR IN OPHTHALMOLOGY at above Hospital. Salary £775 p.a. for first year and £890 p.a. for second year. Successful candidate will be non-resident and will hold the appointment normally for 2 years.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 2 years) for post of REGISTRAR IN RADIOLOGY based on above Hospital. Salary £775 p.a. for first year and £890 p.a. for second year. Successful candidate will be non-resident and will hold the appointment normally for 2 years.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 2 years) for post of REGISTRAR on the E.N.T. Unit at above Hospital. Salary £775 p.a. for first year and £890 p.a. for second year. Successful candidate will be non-resident and will hold the appointment normally for 2 years.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 4 years) for post of SENIOR REGISTRAR on the Medical Unit at above Hospital. Salary within range £1000–£100–£1300 p.a. Successful candidate will be non-resident and will hold appointment normally for 3 years.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 1 year) for post of JUNIOR REGISTRAR IN ANÆSTHETICS at above Hospital. Successful candidate will be non-resident and appointment for 1 year. Salary £670 p.a.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 1 year) for post of JUNIOR REGISTRAR IN OBSTETRICS AND GYNÆCOLOGY based on above Hospital. Successful candidate will be non-resident and appointment will be for 1 year. Salary £670 p.a.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 4 years) for post of SENIOR REGISTRAR on the Surgical Unit at above Hospital. Salary within range £1000–£100–£1300 p.a. Successful candidate will be non-resident and will hold appointment normally for 3 years.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA GENERAL HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 1 year) for post of JUNIOR REGISTRAR on the Surgical Unit at above Hospital. Successful candidate will be non-resident and appointment for 1 year. Salary £670 p.a.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA. MORRISTON HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 2 years) for post of REGISTRAR in the Pathological Department at above Hospital. Salary £775 p.a. for first year and £890 p.a. for second year. Successful candidate will be non-resident and will hold appointment normally for 2 years.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA. MORRISTON HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 1 year) for post of JUNIOR REGISTRAR on the Medical Unit at above Hospital. Successful candidate will be non-resident and appointment for 1 year. Salary £670 p.a.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA. MORRISTON HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 2 years) for post of REGISTRAR on the Pædiatric Unit based at above Hospital. Salary £775 p.a. for first year and £890 p.a. for second year. Successful candidate will be non-resident and will hold appointment normally for 2 years.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA. MORRISTON HOSPITAL. Applications invited from registered medical practitioners (who have been qualified for not less than 2 years) for post of REGISTRAR IN OBSTETRICS AND GYNÆCOLOGY based on above Hospital. Appointment may be resident or non-resident and successful candidate will hold the post normally for 2 years. Salary £775 p.a. in first year and £890 p.a. in second year, non-resident. If resident a deduction at rate of £150 p.a. will be made in respect of board and lodging and other services provided.

Applications, stating age, qualifications with dates, and experience, with names of 3 referees, should be addressed on or before 8th April, 1950, to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

STOCKPORT AND BUXTON HOSPITAL MANAGEMENT COMMITTEE invite applications from registered medical practitioners for non-resident appointment of MEDICAL REGISTRAR (B1), which is within the Junior Registrar or Registrar grades, according to the qualifications and experience of appointed Officer. Post is full-time within the Hospital Management Committee's group, and the work will be carried out mainly at Stockport Infirmary. Salary in accordance with the Ministry of Health terms and conditions of service of medical and dental staffs of hospitals. Applications from R practitioners holding B1 appointments cannot be considered unless they are ineligible for H.M. Forces.

Applications, stating age, nationality, qualifications with dates, and experience, with copies of 2 testimonials or names of 2 referees, should be forwarded by 8th April, 1950, to—

H. G. PRICE, Secretary.
59B, Shaw Heath, Stockport, 17th March, 1950.

STAMFORD AND RUTLAND HOSPITAL. Required, Resident HOUSE SURGEON (B2), Male or Female. Appointment to commence 24th April, 1950. Salary £450 p.a., less emoluments valued at £120.

Applications, stating age, qualifications with dates, nationality, should be sent to the Secretary, Stamford Hospital, Stamford, Lincs.

TRURO. ROYAL CORNWALL INFIRMARY. (General Hospital —280 Beds; 8 Residents.) WEST CORNWALL HOSPITAL MANAGEMENT COMMITTEE. Applications invited from registered medical practitioners, Male or Female, for post of HOUSE SURGEON (A) or (B2) to the Gynæcological Department, vacant 14th June, 1950. Salary £350–£450 p.a., depending on experience, with £100 p.a. deduction in respect of board and lodging, &c.

Applications, stating age, qualifications, and experience, with copies of 2 testimonials, should be forwarded to the Administrative Assistant, Royal Cornwall Infirmary, Truro, Cornwall.

TRURO. ROYAL CORNWALL INFIRMARY. (General Hospital —280 Beds; 8 Residents.) WEST CORNWALL HOSPITAL MANAGEMENT COMMITTEE. Applications invited from registered medical practitioners, Male or Female, for post of RESIDENT JUNIOR HOUSE PHYSICIAN AND HOUSE SURGEON E.N.T. (A) or (B2), vacant 14th June, 1950. Salary £350–£450 p.a., depending on experience, with £100 p.a. deduction in respect of board and lodging, &c.

Applications, stating age, qualifications, and experience, with copies of 2 testimonials, should be forwarded to the Administrative Assistant, Royal Cornwall Infirmary, Truro, Cornwall.

STANNINGTON CHILDREN'S SANATORIUM, Stannington, MORPETH, NORTHUMBERLAND. WANSBECK HOSPITAL MANAGEMENT COMMITTEE. Required, ASSISTANT MEDICAL OFFICER (Registrar grade). Appointment initially for 1 year from 1st May, 1950, and the terms and conditions of service of hospital medical and dental staffs will apply. In this Sanatorium children up to the age of 16 years suffering from any form of tuberculosis are admitted. The bed complement is 270. At present the average number of beds occupied is 150. Valuable experience can be obtained in the treatment of childhood tuberculosis or in orthopædic tuberculosis. The visiting consulting staff are associated with teaching and other hospitals.

Applications, giving full particulars and copies of 2 recent testimonials or names of 2 referees, should be forwarded, as early as possible, to the Medical Superintendent, Stannington Children's Sanatorium, Stannington, Clifton, near Morpeth, Northumberland.

TILBURY AND RIVERSIDE GENERAL HOSPITAL. Orsett LODGE BRANCH. Required, OBSTETRIC HOUSE SURGEON (B2), Male or Female, post vacant from 17th April, 1950. Salary £350–£450 p.a., according to experience, less £100 p.a. residential emoluments. Post tenable for 6 months in the first instance. R practitioners within 3 months of qualification or holding A appointments may apply.

Applications, stating age, qualifications, and enclosing copies of 3 recent testimonials, should be forwarded to the Acting Secretary, South East Essex Hospital Management Committee, Thurrock Hospital, Grays, Essex, within 14 days of appearance of this advertisement.

TILBURY AND RIVERSIDE GENERAL HOSPITAL. Orsett LODGE BRANCH. Required, HOUSE SURGEON (B2). Salary £350–£450 p.a., according to experience, less £100 p.a. in respect of full residential emoluments. Appointment, which qualifies for the Fellowship of the Royal College of Surgeons, will be for 6 months in the first instance. Applications from R practitioners holding A posts may be accepted.

Applications, with copies of 3 recent testimonials, should be forwarded as soon as possible to—

G. E. WHYTE, Acting Secretary,
South East Essex Hospital Management Committee.
Thurrock Hospital, Grays, Essex.

TAUNTON AND SOMERSET HOSPITAL. (284 Beds—8 Residents; additional beds will be opened in the near future.) Required, RESIDENT HOUSE SURGEON (A) or (B2), general surgery and E.N.T. Salary on the National Health Service scale: for first post held £350 p.a. and second post £400 p.a., less deduction of £100 p.a. for board, lodging, &c. Appointment subject to National Health Service superannuation regulations. The post of House Surgeon is recognised by the Royal College of Surgeons as a qualifying appointment for the Final Fellowship Examination. Successful applicant required to take up appointment immediately. R practitioners within 3 months of qualification or holding an A post may apply.

Applications, stating age, qualifications with dates, and details of experience, with 2 recent testimonials, should be sent to the Secretary, Taunton Hospital Management Committee, Musgrove Park Hospital, Taunton.

WARWICKSHIRE. SOUTH WARWICKSHIRE HOSPITAL GROUP (NO. 14) MANAGEMENT COMMITTEE invite applications from registered medical practitioners with the requisite qualifications and with experience in orthopædics, for appointment of SENIOR REGISTRAR (B1) in Orthopædics. Duties will be mainly at the Warwick Hospital, but appointee may be required, as a temporary measure, to perform duties in adjoining groups to the extent of 2 sessions per week. Appointment subject to National Health Service terms and conditions of service of hospital medical and dental staffs (England and Wales) and to the National Health Service superannuation regulations.

Applications, with names and addresses of 3 referees, should be submitted as soon as possible to—

W. A. JAMES, Secretary to the Management Committee.
87, Radford-road, Leamington Spa.

WATFORD. LEAVESDEN HOSPITAL, Abbots Langley, near WATFORD, HERTS. Required, ASSISTANT MEDICAL OFFICER (B1). Junior Hospital Medical Officer grade. Salary £700–£1000, less at present £140 if resident. There is no accommodation for a married man. General hospital and mental deficiency experience necessary. Hospital of 2056 Beds has modern X-ray and Pathological Departments and is visited regularly by Consultants in surgery, gynæcology, ophthalmology, &c.

Applications, stating age, experience, and qualifications, with names of 2 referees, should be sent to the Physician-Superintendent by 17th April, 1950.

WATFORD. LEAVESDEN HOSPITAL, Abbots Langley, near WATFORD, HERTS. Required, JUNIOR REGISTRAR (B1). Salary £670 p.a., with deduction at present of £140 p.a. for board, lodging, &c., if resident. Terms and conditions of service in accordance with those set out by Ministry of Health. Hospital (2056 Beds) provides accommodation for mental defectives and senile mental patients and it is possible to gain unique experience in mental deficiency in all its aspects. There is a modern fully equipped neuropathological laboratory. Facilities given to attend D.P.M. classes and outpatient clinics.

Applications, stating age, qualifications, and experience, with names of 2 referees, to be sent to the Physician-Superintendent by 17th April, 1950.

WICKFORD. RUNWELL HOSPITAL, near Wickford, Essex. (1032 Beds.) Required, HOUSE PHYSICIAN (Junior House Officer, third year). There are excellent opportunities for up-to-date experience and postgraduate work in all branches of psychiatry, including treatment of neuroses. Opportunities will be given at the Hospital for clinical instruction for the D.P.M. Salary £450 p.a., less £100 p.a. for residential emoluments.

Applications, stating age, &c., with copies of testimonials, should be sent to the Secretary as soon as possible.

T. FITZROY KELLY, Secretary.

WELSH REGIONAL HOSPITAL BOARD invite applications for full-time appointment of MEDICAL OFFICER on the Board's Headquarters permanent staff. Salary £1100–£30–£1250–£50–£1450 p.a. Appointee must be a registered medical practitioner. Duties of the office will be concerned with the carrying out of such administrative and executive functions relative to the Hospital and Specialist Service, mainly in North Wales, as may be assigned to him by the Board's Senior Administrative Medical Officer. He will not have operational duties in respect of the day-to-day management of hospitals except where in case of emergency such duties are laid upon him by the Board or the Senior Administrative Medical Officer. Knowledge of the Welsh language is essential. The person appointed will be required to reside at a convenient centre in North Wales. Appointment subject to the provision of the National Health Service superannuation regulations, and is terminable by 3 months' written notice on either side.

Applications, including a statement of the candidate's age, career, qualifications, and experience, and the names of 2 referees, should be received by undersigned not later than 5th April, 1950. R. E. REESE, Secretary.
Temple of Peace and Health, Cardiff.

WHISTON. COUNTY HOSPITAL. (880 Beds.) Required, ANÆSTHETIC REGISTRAR (B1), Male or Female, resident. Appointment tenable for 12 months and successful applicant will be required to work under the supervision of the Visiting Anæsthetists. Hospital is approved for the D.A. Salary £775–£890 p.a., less deduction for residential emoluments. R practitioners holding B2 appointments, also those holding B1 posts and ineligible for H.M. Forces, are invited to apply.

Applications to be forwarded as soon as possible to—

N. RICHARDS, Secretary, St. Helens and
District Hospital Management Committee.
Group Office, County Hospital, Whiston,
near Prescot, Lancs.

WHISTON. COUNTY HOSPITAL. (880 Beds.) Required, RESIDENT HOUSE SURGEON (A) or (B2). 6 months' appointment. Salary £350–£450 p.a., less £100 p.a. for residential emoluments. R practitioners within 3 months of qualification may apply.

Applications to be forwarded as soon as possible to—

N. RICHARDS, Secretary, St. Helens and
District Hospital Management Committee.
Group Office, County Hospital, Whiston,
near Prescot, Lancs.

WIGAN AND LEIGH HOSPITAL MANAGEMENT COMMITTEE. ROYAL ALBERT EDWARD INFIRMARY, WIGAN, AND WHELLEY HOSPITAL, WIGAN. Required, HOUSE PHYSICIAN (B2), Male or Female, for above Hospitals. Appointee required to reside at Whelley Hospital, and to undertake general medical duties at that Hospital (76 Beds) and at the Royal Albert Edward Infirmary, Wigan, a major general hospital of 225 Beds, where there is ample opportunity of gaining a wide experience in the various branches of medicine. Preference given to candidates taking a higher degree. Salary £350–£450 p.a., commencing point being determined by previous experience. Appointment in the first place for 6 months.

Applications, with names of 2 referees, should be sent by 30th March, 1950, to—

T. W. HURST, Secretary,
Wigan and Leigh Hospital Management Committee.
Knowsley House, Wigan.

WIGAN AND LEIGH HOSPITAL MANAGEMENT COMMITTEE. Applications invited from registered medical practitioners, Male or Female, for following posts:—

Royal Albert Edward Infirmary, Wigan (General Hospital—225 Beds)
SENIOR HOUSE SURGEON (B2).
HOUSE SURGEON (B2), orthopædic and casualty duties.
HOUSE SURGEON (A).

Leigh Infirmary, The Avenue, Leigh (General Hospital—102 Beds)
HOUSE SURGEON (B2), casualty and orthopædic duties.
HOUSE PHYSICIAN (A).

Salaries and conditions of service are in accordance with the scales and conditions of service for hospital medical and dental staffs. The foregoing posts are resident, and will in the first instance be tenable for 6 months.

Applications, stating age and nationality, qualifications with dates, with names of 2 referees, should be forwarded by 30th March, 1950, to T. W. HURST, Secretary.
Knowsley House, Wigan.

WREXHAM. MAELOR GENERAL HOSPITAL. Required, 2 HOUSE PHYSICIANS (A) or (B2). 6 months' appointment, commencing 24th April, 1950. Salary £350–£450 p.a., according to experience, less £100 p.a. for full residential emoluments.

Applications, giving age, nationality, qualifications, and experience, with copies of 2 recent testimonials, to be addressed to WM. JONES, Secretary, Wrexham, Powys and Mawddach Hospital Management Committee, Maelor General Hospital, Wrexham.

WREXHAM. TREVALYN MANOR MATERNITY HOSPITAL, ROSSETT, WREXHAM. (45 Beds.) Applications invited from registered medical practitioners, preferably Female, for post of OBSTETRIC HOUSE SURGEON (A) or (B2), appointment to commence 5th April, 1950. Conditions of service in accordance with the new terms introduced. Salary will vary from £350–£450 p.a. according to posts previously held, with a deduction of £100 p.a. in respect of board and lodging and other services provided. Appointment will, in the first instance, be for 6 months. Successful applicant will act as deputy and assistant to the Resident Medical Officer.

Applications, stating age, experience, qualifications, and nationality, with copies of 2 recent testimonials, to be sent to the Secretary, Wrexham, Powys and Mawddach Hospital Management Committee, Maelor General Hospital, Croesnewydd-road, Wrexham.

WEST BROMWICH. HALLAM HOSPITAL, Hallam-street. (440 Beds.) WEST BROMWICH AND DISTRICT HOSPITALS GROUP NO. 18. Required, ANÆSTHETIC REGISTRAR (B1), post vacant 1st April, 1950. Preference given to candidates holding a higher qualification and of Senior Registrar status, though others may apply. Post recognised for the D.A. Salary and terms and conditions of service as laid down by the Ministry of Health.

Applications, with copies of 2 recent testimonials, to the Medical Secretary, Hallam Hospital, West Bromwich.

WEST BROMWICH. HALLAM HOSPITAL, Hallam-street. (440 Beds.) WEST BROMWICH AND DISTRICT HOSPITALS GROUP NO. 18. Required, HOUSE SURGEON (B2), post vacant 1st April, 1950. Salary within scale £350–£450 p.a., inclusive of residential emoluments valued at £100 p.a. Holders of A posts may apply, when appointment will be limited to 6 months.

Applications, accompanied by 1 recent testimonial, should be sent to the Medical Secretary, Hallam Hospital, West Bromwich.

WINCHESTER. ROYAL HAMPSHIRE COUNTY HOSPITAL. WINCHESTER GROUP HOSPITAL MANAGEMENT COMMITTEE. ORTHOPÆDIC REGISTRAR (non-resident), F.R.C.S. essential. Salary in accordance with the terms and conditions of service of hospital medical staff.

Applications, stating age, qualifications, and experience, with 2 recent testimonials, to be sent to the Secretary.

WINCHESTER. ROYAL HAMPSHIRE COUNTY HOSPITAL. (323 Beds.) WINCHESTER GROUP HOSPITAL MANAGEMENT COMMITTEE. NON-RESIDENT REGISTRAR to the Department of Physical Medicine, post now vacant. The Department is recognised by the Examining Board in England for Part II of the Diploma of Physical Medicine and preference given to candidates holding a higher qualification. Salary in accordance with the terms and conditions of service of hospital medical and dental staffs, and according to experience.

Applications, stating age, qualifications, and experience, with names of 2 referees, should be sent to the Superintendent and Secretary, Royal Hampshire County Hospital, Winchester.

WOLVERHAMPTON. THE ROYAL HOSPITAL. (An Associate Hospital of the University of Birmingham Medical School.) WOLVERHAMPTON HOSPITAL MANAGEMENT COMMITTEE GROUP NO. 16, BIRMINGHAM REGION. Required, REGISTRAR, Fracture and Orthopædic Department of the Royal Hospital, vacant forthwith. Appointment will be Junior Registrar, Registrar, or Senior Registrar status according to the qualifications of selected candidate. Salary in accordance with the National Health Service scale.

Applications, with copies of 3 recent testimonials, to be sent to W. COCKBURN, House Governor.

WOLVERHAMPTON. THE ROYAL HOSPITAL. (An Associate Hospital of the University of Birmingham Medical School.) WOLVERHAMPTON HOSPITAL MANAGEMENT COMMITTEE GROUP NO. 16, BIRMINGHAM REGION. Required, SENIOR CASUALTY OFFICER (Registrar), post vacant forthwith. Salary and conditions of service in accordance with the National Health Service scale.

Applications, with copies of 3 recent testimonials, to be sent to W. COCKBURN, House Governor.

WOLVERHAMPTON. THE ROYAL HOSPITAL. (An Associate Hospital of the University of Birmingham Medical School.) WOLVERHAMPTON HOSPITAL MANAGEMENT COMMITTEE, GROUP NO. 16, BIRMINGHAM REGION. Applications invited from registered medical practitioners for following (A) or (B2) posts:—

(*a*) HOUSE SURGEON, Fracture and Orthopædic Department, vacant now.

(*b*) HOUSE SURGEON, Ear, Throat, and Nose Department, vacant now.

6 months' appointments. Salary in accordance with the National Health Service scale.

Applications to W. COCKBURN, House Governor.

WOLVERHAMPTON HOSPITAL MANAGEMENT COMMITTEE, GROUP NO. 16, BIRMINGHAM REGION. Applications invited from registered medical practitioners for appointment of RESIDENT JUNIOR OBSTETRIC AND GYNÆCOLOGICAL REGISTRAR (B1). Appointment is to the obstetric and gynæcological service of Group No. 16, Birmingham Region, and is primarily centred at New Cross Hospital (40 obstetric beds). Salary and conditions of service in accordance with the National Health Service scale.

Applications, with copies of 3 recent testimonials, to be sent to W. COCKBURN, Secretary.

The Royal Hospital, Wolverhampton.

WORCESTER ROYAL INFIRMARY. Required, House Surgeon (A), post vacant 1st April. Appointment for 6 months. Salary in accordance with the terms and conditions of service for hospital medical staff.

Applications, with copies of testimonials, should be sent to the Secretary, South Worcestershire Hospital Management Committee, as soon as possible.

WORCESTER ROYAL INFIRMARY. Required, House Surgeon (B2) to the Orthopædic Department, vacant 18th April. Appointment for 6 months and the salary payable will be in accordance with the terms and conditions of service for hospital medical staff.

Applications, with copies of testimonials, should be sent to the Secretary, South Worcestershire Hospital Management Committee, as soon as possible.

NEW YORK. VASSAR BROTHERS HOSPITAL, Reade-place, POUGHKEEPSIE, NEW YORK. We solicit inquiry relative to several vacancies on an Active ROTATING INTERNE Service with excellent teaching facilities. Residencies in several specialties available following 1 year of Internship. Salary offered is $75 per month, including full maintenance, plus a bonus up to $250 upon the completion of a year of satisfactory service.

Apply to the Administrator.

YORK. CITY HOSPITAL. (Modern General Hospital of 265 Beds, with full Consultant staff.) Required, RESIDENT HOUSE SURGEON (A) or (B2), duties to commence as soon as possible. Post for 6 months. Salary £350 for first post held, £400 for second post held, £450 for third post held, with a deduction of £100 p.a. for residential accommodation.

Applications, giving details of age, nationality, experience, and qualifications, with 2 testimonials, to be forwarded immediately to—

F. A. MILNES, F.H.A., A.L.A.A., Secretary,
York A and Tadcaster Hospital Management Committee.
Bootham Park, York.

JERSEY, CHANNEL ISLANDS. Resident Surgical Officer required for General Hospital. Salary £600 p.a. Position to be held for at least 1 year. Preference to applicants holding the Diploma of F.R.C.S. or for one working for the said diploma.

Apply to the President, Public Health Committee, General Hospital, Jersey, Channel Islands.

NEW YORK. ALBANY HOSPITAL, affiliated with Albany Medical COLLEGE, ALBANY, NEW YORK. E.N.T. approved RESIDENCY IN NEUROLOGY AND PSYCHIATRY available 1st July, 1950.

Write Administrative Office.

NEW YORK. ST. JOHN'S RIVERSIDE HOSPITAL. Internships. Appointments now being made: rotating service beginning 1st July, 1950, for 1 year: A.M.A. approved: 220 Bed hospital: graduates grade "A" schools. Salary $100 per month, with complete maintenance and uniforms furnished.

Chairman, Intern Committee, St. John's Riverside Hospital, Yonkers, New York.

Public Appointments

BUCKS COUNTY COUNCIL. Applications invited from registered medical practitioners holding a registrable qualification in public health for appointment of ASSISTANT COUNTY MEDICAL OFFICER for duties in connection with school health, care of mothers and young children, and the mental health services. Salary on scale of £735–£25–£935 p.a. An additional £100 p.a. will be paid if successful candidate has special knowledge of, or experience in, mental deficiency or mental illness. Travelling and subsistence allowances will be paid on the County Council's scale. Appointment is superannuable and subject to medical examination.

Further particulars and forms of application may be obtained from the County Medical Officer, County Offices, Aylesbury, to whom completed applications must be delivered by 8th April, 1950. GUY R. CROUCH, Clerk of the Bucks County Council.

County Hall, Aylesbury, March, 1950.

BIRMINGHAM. CITY OF BIRMINGHAM PUBLIC HEALTH DEPARTMENT. MEDICAL OFFICERS. Holiday Locums. Applications invited for temporary appointment of 2 whole-time Medical Officers in the Maternity and Child Welfare Department to take holiday duty during the summer months, commencing 1st May, 1950. Appointments are non-resident, and the salary offered is at rate of £14 per week, or in the event of any amendment of agreed national scale, the new minimum rate applicable to Assistant Medical Officers will apply. Successful applicants will be expected to remain, if required, for a period of 6 months.

Application forms may be obtained from the Medical Officer of Health, Council House, Birmingham, 3, and completed forms should be returned to him, with copies of 3 testimonials, by 12th April, 1950.

DURHAM. COUNTY COUNCIL OF DURHAM. Health Com-MITTEE. Applications invited from duly registered medical practitioners for post of ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH on a salary scale of £675 p.a., by annual increments of £25 to maximum of £875 p.a., plus cost-of-living bonus amounting to £60 p.a. Appointee required to undertake clinical and administrative duties under the direction of the County Medical Officer of Health. He will be required to devote the whole of his time to the duties of the office and must not engage in private practice. Appointment, which is superannuable, is subject to the regulations for the time being of the County Council relative to the payment of salary in the case of sickness, and will be terminable by 3 calendar months' notice on either side. Successful candidate required to pass the County Council's medical examination.

Applications, stating age, qualifications, and experience, with copies of 1–3 recent testimonials, should be forwarded to the County Medical Officer of Health, Shire Hall, Durham, to arrive by 11th April, 1950. Canvassing, directly or indirectly, will disqualify, and applicants must disclose in writing whether they are related to any member or senior officer of the County Council. J. K. HOPE, Clerk of the County Council.

Shire Hall, Durham, 15th March, 1950.

MANCHESTER. CITY OF MANCHESTER. Applications invited from registered medical practitioners for appointment as ASSISTANT MEDICAL OFFICER in the Maternity and Child Welfare Section of the Health Department. Applicants should have obstetric or/and pædiatric experience and will be required to undertake duties in clinics. Possession of the D.P.H., D.C.H., or D.Obst.R.C.O.G. qualifications will be essential. Consolidated salary scale £735–£935 p.a. Appointment subject to national scheme of service conditions, and the standing orders of the Council. Successful candidate required to pass a medical examination and to contribute to the Manchester Corporation superannuation fund.

Form of application can be obtained on request, and must be sent with copies of 3 recent testimonials, in an envelope marked "Assistant Medical Officer, Maternity and Child Welfare" to me only, and not to any member of the Council, by 8th April, 1950. Canvassing in any form is prohibited and relationship to any member of the Council or Senior Officer must be disclosed in writing. PHILIP B. DINGLE, Town Clerk.

Town Hall, Manchester, 2.

COMMONWEALTH OF AUSTRALIA. Department of Health. Applications invited for position of MEDICAL OFFICER (Tuberculosis), Canberra. Salary: £A1750 Australian p.a. Period of engagement will be from 3–5 years with opportunity of renewal if services satisfactory. Duties: to investigate all migrants arriving at the Immigration Reception Centres and be responsible for the care of new Australian tuberculous subjects. Qualifications: applicants must be capable of conducting epidemiological investigations and services associated with "case finding." Preference given to the applicants who hold a senior medical qualification and who have had post-graduate training and experience in the prevention, diagnosis, treatment and control of tuberculosis and thoracic diseases. Applicants would need to have had considerable experience in the interpretation of miniature or of full size radiographs of the chest.

Applications to the Chief Medical Officer, Australia House, by 30th April, 1950.

COMMONWEALTH OF AUSTRALIA. Department of Health. Applications invited for position of ASSISTANT DIRECTOR (Tuberculosis Division), Canberra. Salary: £A2250 Australian p.a. Period of engagement will be from 3–5 years with opportunity of renewal if services satisfactory. Duties: to assist the Director in the administration and direction of the work of the Tuberculosis Division and to act as his Deputy when required. Qualifications: applicants should be experienced physicians and preferably should hold a senior medical degree such as a Doctorate of Medicine of an accredited university and/or Membership or Fellowship of one of the Royal Colleges of Physicians. They should have had considerable post-graduate training and experience in the prevention, diagnosis, treatment and control of tuberculosis and of other thoracic diseases. They should be of Consultant status and any medical administrative experience should be indicated.

Applications to the Chief Medical Officer, Australia House, by 30th April, 1950.

ESSEX. COUNTY COUNCIL OF ESSEX. South Essex Health AREA. Applications invited from registered medical practitioners with experience in school medical inspection and maternity and child welfare work, preferably possessing the D.C.H. and/or the C.P.H. or D.P.H., for appointment of ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH for duties principally in the Grays, Hornchurch, and Brentwood districts of the Administrative County. Remuneration at rate of £750 a year, rising, subject to satisfactory service, by annual increments of £25 to £950 a year, plus such bonus (if any) as may be determined from time to time by the Council. Candidate selected for appointment will be required to pass a medical examination and, if appointed, to contribute to the Council's superannuation fund.

Application forms may be obtained from the Acting Area Medical Officer, Palmers-avenue, Grays, Essex, to whom they should be returned, with copies of 1–3 recent testimonials as soon as possible. Canvassing, directly or indirectly, will disqualify.

ESSEX COUNTY COUNCIL. Ilford Health Area. Applications invited for appointment of ASSISTANT MEDICAL OFFICER on the staff of the Essex County Council in the Department of the Area Medical Officer for the Borough of Ilford. Scale of salary attaching to appointment is £750 p.a., by annual increments of £25 to maximum of £950 p.a., plus such bonus as the Council from time to time decide, which at present amounts to 23s. per week. Commencing salary fixed according to experience and qualifications. A travelling allowance is also payable in respect of the use of private cars on Council duties in accordance with the Council's scale. Duties are mainly concerned with Part III (local health) and School Health Services, with such other duties as may be assigned. Successful candidate required to give whole-time service to the County Council, to pass a medical examination, and to contribute to the Council's superannuation fund.

Forms of application may be obtained from undersigned to whom they must be returned, duly completed, by 8th April, 1950. K. F. B. NICHOLLS, Area Clerk.

Town Hall, Ilford, March, 1950.

LANCASHIRE COUNTY COUNCIL. Applications invited from registered medical practitioners with postgraduate qualification in psychology, for appointment of PSYCHIATRIST at Child Guidance Clinics. Applicants should have had experience in child psychiatry and preferably have taken the recognised training course in child guidance. Appointee will be the Director of the Clinics and will be required for 4 or more weekly sessions. Payment £4 4s. per session of from 1 to 2½ hours. Mileage allowance for own car.

Applications, stating age, qualifications, full experience, and giving the names of 2 referees, should be sent to the County Medical Officer, School Health Department, County Offices, Preston.

PLYMOUTH. CITY OF PLYMOUTH. Applications invited from registered medical practitioners (Male) for whole-time appointment of ASSISTANT MEDICAL OFFICER OF HEALTH. Salary scale £735–£25–£935 p.a. Previous service on this salary scale under another Local Authority will be reckoned in calculating the commencing salary within this scale. All other fees received by the Officer must be refunded to the Council. Appointment subject to the provisions of the Local Government Superannuation Act, 1937, and terminable by 3 months' notice on either side at any time, and the successful applicant will be required to pass a medical examination. Duties will be mainly port health work and immunisation and vaccination. The possession of the D.P.H. and experience in infectious disease will be regarded as additional qualifications.

Applications, stating age, qualifications, and experience, with copies of 2 recent testimonials, should be sent to undersigned in an envelope endorsed "Assistant Medical Officer of Health" by 28th March, 1950.

T. PEIRSON, Medical Officer of Health.

Seven Trees, Lipson-road, Plymouth.

EAST HAM. COUNTY BOROUGH OF EAST HAM. Applications invited from fully qualified Men and Women for appointment of ASSISTANT MEDICAL OFFICER OF HEALTH (maternity and child welfare) at a salary of £735 by annual increments of £25 to £935 p.a. Salary above the minimum may be paid according to qualifications and experience. Special experience in practical midwifery, antenatal and child-welfare work is essential.

Full particulars of duties, terms, and conditions of appointment and form of application (which must be returned by 7th April, 1950) may be obtained from undersigned. Canvassing will disqualify. H. A. EDWARDS, Town Clerk.

Town Hall, East Ham, E.6, March, 1950

EAST HAM. COUNTY BOROUGH OF EAST HAM. Applications invited for appointment of MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER at a salary of £1435 p.a., by annual increments of £50 to £1558 16s. p.a. Applicants must not be more than 45 years of age and must be duly qualified medical practitioners registered in the medical register as the holders of a Diploma in Sanitary Science, Public Health or State Medicine, and have had considerable clinical and administrative experience in public health and school medical work. Appointment subject to the provisions of the Local Government Superannuation Act, 1937, as modified by the National Health Service (Superannuation) Regulations, 1947 to 1949, to passing successfully a medical examination, and to the Council's conditions of service applicable to the post and in force from time to time. Appointee will be required to devote the whole of his time to the duties of the appointment and to enter into a service agreement in a form to be prepared by the Town Clerk.

Further particulars of duties, terms, and conditions of the appointment and form of application (which must be returned by 7th April, 1950) may be obtained from undersigned. Canvassing in any form will be a disqualification.

H. A. EDWARDS, Town Clerk.

Town Hall, East Ham, E.6, March, 1950.

MINISTRY OF PENSIONS.

Stoke Mandeville Hospital, Aylesbury, Bucks

A vacancy for an ANÆSTHETIST exists at above-named Hospital (approved for course of study for D.A.). Applications are invited from suitably qualified registered medical practitioners. Salary in range £650–£900 p.a., plus free board and lodging or £100 p.a. in lieu if non-resident. Applications from R practitioners now holding B1 posts cannot be considered unless they have the permission of the Central Medical War Committee.

Applications, stating age, qualifications with dates, and nationality, with copies of 2 recent testimonials, are to be addressed to the Secretary, Ministry of Pensions, Medical Services Division, Norcross, Blackpool, Lancs, and must be received by 8th April, 1950.

MINISTRY OF SUPPLY invites applications from Physiologists for appointment as SENIOR SCIENTIFIC OFFICER or SCIENTIFIC OFFICER at a Research Establishment in Hampshire to carry out applied research connected with development of military clothing and equipment. Good honours degree or equivalent qualification in physiology essential. For Senior Scientific Officer grade at least 3 years' postgraduate research experience required; some similar experience desirable for Scientific Officer grade. Salary, according to age, qualifications, and experience, within ranges: Senior Scientific Officer (minimum age 26) £670–£860, Scientific Officer £380–£620. Rates for Women somewhat lower. Post unestablished but carries F.S.S.U. benefits.

Write, quoting G 62/50, to Ministry of Labour and National Service, Technical and Scientific Register, (K) York House, Kingsway, London, W.C.2, for application forms which must be returned completed by 17th April, 1950.

STOCKPORT. COUNTY BOROUGH OF STOCKPORT. Health DEPARTMENT. Applications invited from qualified medical practitioners for appointment of ASSISTANT MEDICAL OFFICER OF HEALTH for Maternity and Child Welfare. The candidate will be required to devote the whole of his or her time to the duties of the office. Salary £735 p.a., by annual increments of £25 to £935 p.a. Successful applicant will be placed at the appropriate point of the scale in accordance with his or her experience. Appointee required to pass a medical examination and will be subject to the provisions of the Local Government Act, 1937.

Forms of application and particulars as to the appointment, may be obtained from the Medical Officer of Health, Town Hall, Stockport. Applications, accompanied by copies of 3 recent testimonials and endorsed "Assistant Medical Officer of Health," should be sent forthwith to the Medical Officer of Health, Town Hall, Stockport. Canvassing, directly or indirectly, will be a disqualification.

YORKSHIRE. COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE. Vacancies exist in the permanent establishment of ASSISTANT COUNTY MEDICAL OFFICERS in a number of areas in the County. Applicants should have had postgraduate experience in diseases of children and possession of the D.P.H. or D.C.H. qualification is desirable, although not essential. The Assistant will work under the direction of the Divisional Medical Officer for the area concerned and duties will be mainly concerned with the school health, infant welfare, and antenatal services, but other public health duties may be included by the Divisional Medical Officer. Scale of salary £735 p.a., by annual increments of £25 to £935 p.a. inclusive, and consideration given to previous experience in determining commencing salary. Travelling and subsistence allowances on the County Council's scale are payable in addition to salary. Posts are superannuable and successful applicants required to pass a medical examination as to physical fitness.

Forms of application can be obtained from undersigned, to whom they should be returned by 15th April, 1950.

FRASER BROCKINGTON, County Medical Officer.

County Hall, Wakefield.

LONDON COUNTY COUNCIL. Applications invited from registered medical practitioners who have accepted service under the National Health Service Act for appointment as VISITING MEDICAL OFFICER to Langley House Children's Receiving Home, 54, East India Dock-road, E.14. Provisional salary is £100 a year, exclusive of any fees receivable from the Executive Council in respect of temporary residents and staff who choose to go on the visiting medical officer's list.

A form of application can be obtained from the Medical Officer of Health (PH/D1), The County Hall, Westminster Bridge, S.E.1, and should be returned by 15th April, 1950. (343.)

MIDDLESEX COUNTY COUNCIL. Assistant Medical Officer (whole-time) required in County Health Department, initially in Area 4 (Finchley and Hendon). Duties mainly with supervision of health of mothers and young children, and School Health Service. D.P.H. or D.C.H. an advantage. Salary £675–£25–£875 p.a., plus cost-of-living bonus (now £60 p.a.). Previous Local Authority service in a similar capacity will determine commencing salary in accordance with Askwith memorandum. Subject to medical examination.

Applications, stating age, qualifications, experience, names of 2 referees to Joint Area Medical Officer (Hendon), Town Hall, The Burroughs, Hendon, N.W.4, to be returned within 14 days (quoting G.760 L.). Canvassing disqualifies.

C. W. RADCLIFFE, Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.

ORKNEY COUNTY COUNCIL. North-Eastern Regional Hospital BOARD, SCOTLAND. Applications invited from registered medical practitioners for the joint appointment of MEDICAL OFFICER OF HEALTH AND GROUP HOSPITAL OFFICER for the County of Orkney. Applicants must possess the D.P.H., be qualified in the clinical care of tuberculosis, infectious diseases, and chronic sick, and have experience in public health duties and functions and of administrative work at hospital, sanatoria, &c. Salary attached to combined post is £1400 p.a., by annual increments of £50 to £1600 p.a. Post will be superannuable. It is hoped that suitable housing accommodation will be available.

Full particulars may be obtained from the County Clerk, County Offices, Kirkwall, Orkney, with whom applications (12 copies), stating age, qualifications, and experience, accompanied by 1–3 recent testimonials, should be lodged by 15th April, 1950.

JOHN N. MCCONACHIE, Secretary,
North-Eastern Regional Hospital Board.
Aberdeen.

DOUGLAS M. WOOD, County Clerk.
County Offices, Kirkwall.

STOKE-ON-TRENT. CITY OF STOKE-ON-TRENT. Public HEALTH DEPARTMENT. Applications invited from qualified medical practitioners (Women) for post of ASSISTANT MEDICAL OFFICER OF HEALTH (maternity and child welfare). Candidates should have experience in diseases of children and obstetrics. Opportunity will be given for hospital contact with both pædiatrics and obstetrics. The possession of a D.P.H. or D.C.H. considered an additional qualification. Salary £735 p.a., by annual increments of £25 to £935 p.a. Where a candidate is in the service of another Authority, on a rising scale, recognition may be given to past service in fixing commencing salary.

Forms of application may be obtained from the Medical Officer of Health, Public Health Department, Glebe-street, Stoke-on-Trent, to whom completed forms should be returned, with copies of 1–3 recent testimonials, as soon as possible.

HARRY TAYLOR, Town Clerk.

General Practice

For an Executive Council post apply on form E.C.16A obtainable from the council. Mark envelope "Vacancy."

GREAT YARMOUTH. Applications invited for Vacancy (chiefly urban). List at present approximately 2350. Residence and surgery available. Apply on E.C.16A before 15th April, 1950, to undersigned.

W. J. HALL, Clerk,
Great Yarmouth Executive Council.

17, South-quay, Great Yarmouth.

PRESTATYN, FLINTSHIRE. Applications invited for above urban district and adjoining rural parishes. List at present approximately 2208. Residence and surgery accommodation not available. Application on Form E.C.16A, by 8th April, 1950, to—

TUDOR WILLIAMS, Clerk of the
Denbighshire and Flintshire Executive Council.

11, Grosvenor-road, Wrexham.

WEST RIDING OF YORKSHIRE EXECUTIVE COUNCIL. Applications invited for VACANCY arising in the Borough of Batley. List at present approximately 3800. Apply on E.C.16A, before 15th April, 1950, to undersigned. Further particulars may be obtained on application.

C. H. STABLER, Clerk of the
West Riding of Yorkshire Executive Council.

5, St. John's North, Wakefield.

Hospital Services: Non-medical Appointments

EXETER. ROYAL DEVON AND EXETER HOSPITAL. Exeter AND MID-DEVON HOSPITALS MANAGEMENT COMMITTEE. There is a vacancy for a SENIOR TECHNICIAN in the Department of Pathology at above Hospital. Duties in section of histology at which branch of work applicant must be capable and experienced. Applicants must fulfil conditions of appointment in this grade. Salary £450–£20–£530. Commencing salary in accordance with experience.

Apply as soon as possible, giving names of 2 referees, to Area Pathologist, Department of Pathology, Royal Devon and Exeter Hospital, Exeter.

BRIGHTON AND LEWES HOSPITAL MANAGEMENT COMMITTEE. LABORATORY TECHNICIAN required in the Pathological Department of the Royal Sussex County Hospital, Brighton. Applicants should be Fellows or Associates of the Institute of Medical Laboratory Technology. Salary according to latest award.

Applications, stating experience, &c., with copies of 3 recent testimonials, should be forwarded as soon as possible to the Administrative Officer, Royal Sussex County Hospital.

HULL. VICTORIA HOSPITAL FOR SICK CHILDREN, Park-street, HULL. (143 Beds.) HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, TECHNICIAN at above Hospital. Candidates must have had considerable experience in hæmatology and bacteriology and should possess the diploma of the A.I.M.L.T. Salary and conditions of service in accordance with the Whitley Council scales.

Applications, giving age and full details of experience, to be sent to the Administrative Officer at above address.

NOTTINGHAM GENERAL HOSPITAL. Technician, preferably holding the final qualification of the I.M.L.T. by examination in bacteriology or hæmatology and with all-round experience, required at the Pathology Department, Nottingham General Hospital. Salary in accordance with Ministry of Health scale, commencing figure according to experience.

Applications to be submitted to the Secretary, Nottingham No. 1 Hospital Management Committee, Nottingham General Hospital, immediately.

NOTTINGHAM GENERAL HOSPITAL. Senior Technician, holding the final qualification (preference given to Fellows) of the I.M.L.T. by examination in bacteriology or hæmatology, and with all-round experience, required in the Pathology Department. Salary in accordance with the Ministry of Health scale, commencing figure according to experience.

Applications to be submitted to the Secretary, Nottingham No. 1 Hospital Management Committee, General Hospital, Nottingham, as soon as possible.

Miscellaneous

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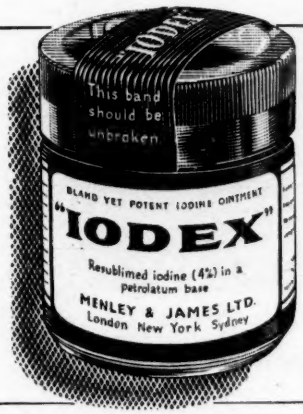
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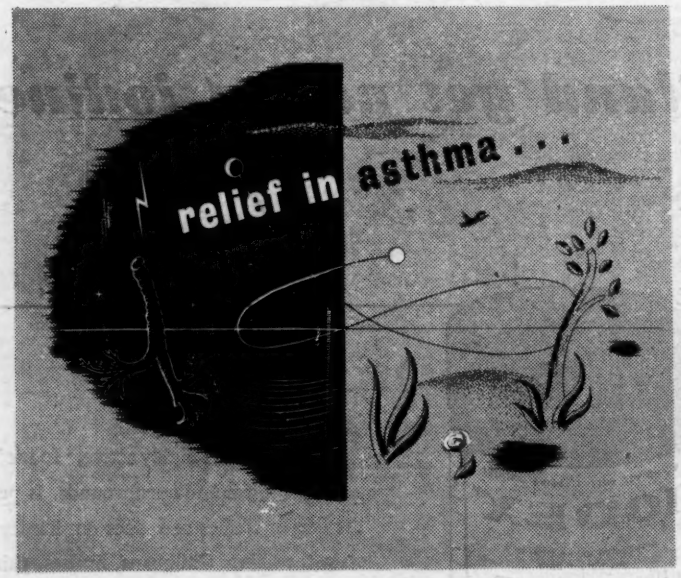

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